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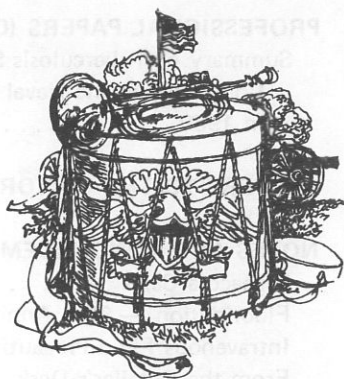
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Credits: All pictures are Official U.S. Navy Photographs unless otherwise indicated.

Our delightful cover girl ably represents the Navy Nurse Corps on its 63rd Anniversary month. She is LT(jg) Patricia A. Cullinane, NC, USNR, a staff member at Naval Hospital Camp Pendleton, where she reported for active duty in Sept. 1970. Miss Cullinane participated in the Navy Nurse Corps Candidate Program at Seattle University, Seattle, Wash., where she received a BSN in 1970. Photographers HM1 M.R. Villaroman, Jr., and HM3 Marvin Bennett obviously enjoyed their work.

Page 3. VADM George M. Davis, MC, USN, Surgeon General (left), is pictured during a previous visit to Naval Hospital Camp Pendleton, Calif., discussing the work situation there with a staff officer. Photo by HM1 Villaroman, Jr., through courtesy of Commanding Officer CAPT George M. Ricketson, MC, USN and THE PULSE BEAT, the excellent publication at NavHosp Camp Pendleton.

Back Cover photo was taken during the evening hours at the Command and Staff Seminar held in March 1971 at the Airlie Conference Center in Warrenton, Va. Pictured from left to right are: RADM C.L. Waite, MC, USN; RADM J.W. Albright, MC, USN, Deputy Surgeon General; CAPT J.T. Vincent, MC, USN of the Medical Corps Branch, Professional Division, BUMED, and; CAPT D.H. Gaylor, MC, USN, Head of Academic Dept., Naval Medical School, NNMC, Bethesda, Md. We are grateful for the splendid pictures of scenes at the Command and Staff Seminar, provided by the Photography Division of the Medical Graphic Arts Dept. at the Naval Medical School.



AFPS

Armed Forces Day 1971

WHITE HOUSE

Today our nation pauses to honor the men and women of the Armed Forces.

For nearly two-hundred years, our fellow citizens have valiantly answered the call to arms, defending the precious heritage of our civilization and giving a brotherly hand to other peoples of the world. As they have served us so well, it is fitting that as a nation we are now engaged in a determined effort to serve them equally well; to raise their standard of living; to provide better homes and schools for their families; to ensure that their assignments offer challenge and satisfaction; and to reemphasize the proud place which they hold in our national life.

This Armed Forces Day 1971 provides an opportunity for all of us to extend to them our appreciation, not only for their sacrifices but for their constant guardianship of freedom and justice throughout the world.

I join with the American people in saluting all members of the Armed Forces and expressing to them our continuing admiration and respect.

DEFENSE DEPARTMENT

The Armed Forces of the United States serve as a unified team, at home and at outposts throughout the world, insuring our nation's freedom and security. These dedicated men and women also help our allies and friends abroad to maintain their freedom and security under the President's program of peace through strength, partnership and the willingness to negotiate.

Americans are proud of our Armed Forces. Without the dedication and the preparedness of the men and women who wear the uniform, our country would have neither security nor freedom.

On this Armed Forces Day, let us reaffirm our faith in this freedom and rededicate ourselves to the goal of world peace, mindful of the great sacrifice so many men and women have made in serving this cause.



from the Chief

We are all aware that limited resources curtail the effective delivery of health care services. Efforts to extend and expand those resources will continue.

Meanwhile, I am heartened and impressed by the ingenuity and enthusiasm with which some of our medical activities are operating under existing conditions. Preliminary analysis of reports makes it possible to construct certain trends responsible for successful innovations. Some of the patterns for self-improvement merit general consideration here.

At the managerial and supervisory level, careful scrutiny and assessment of personnel is being practiced. The advantages of discerning those professionally competent, productive officers who are modest and unassuming by temperament, are evident. Conscious effort is being made to ensure that such members are recognized and encouraged, rather than exploited or overlooked.

Prudent senior officers do not sit detached in their offices, awaiting a formal report or complaint. They enter the line of action and observe working situations firsthand. Through such participation, problems are accurately defined and realistic priorities are set.

Precedent, while it may explain the origin of a given practice, seldom justifies it. Those who ask why something is done in a particular way are often enlightened by the answer. Innovation can be most rewarding when it renders an institution more responsive to the needs of the patients and staff alike. When it appears that a particular area or service is consistently overburdened, for example, ways have been found to involve other personnel. Even without an increase in total manpower, better distribution of work load may alleviate critical shortage and enhance morale.

The need for effective communication between a medical activity and the naval community it supports is being recognized. Internal communication among staff members is equally important, for informed personnel invariably contribute more. Greater overall satisfaction is realized when interested parties feel they have received adequate consideration, and have substantially influenced the resulting program.

You are invited to share with us your experiences in achieving better medical care. No advance is too modest or elementary for profitable application if it leads to better care and satisfaction for a patient.





THE SURGEON GENERAL OF THE NAVY
WASHINGTON

ANNIVERSARY GREETINGS TO THE NAVY NURSE CORPS

On this, the Sixty-third Anniversary of the Navy Nurse Corps, I send warm personal regards and deep appreciation for your dedicated and loyal support.

This past year has added another chapter of outstanding professional achievement to the illustrious history of your Corps. Your continued resolute and unswerving commitment to your professional responsibilities, to the Navy Health Care team, and to your Command has contributed immeasurably to the mission of the Medical Department. Military men and women and their families hold you in high esteem and look to your leadership in providing the comprehensive nursing care they need and to which they are entitled.

I am confident that the future challenges of the profession of military nursing will be met with the same excellence of performance which has been traditional of the Navy Nurse Corps.

I commend you for a job "Well Done" and send you my best wishes for a Happy Birthday.



G. M. Davis

G. M. DAVIS
Vice Admiral, MC, USN
Surgeon General



DEPARTMENT OF THE NAVY
BUREAU OF MEDICINE AND SURGERY
WASHINGTON, D.C. 20390

ANNIVERSARY GREETINGS FROM DIRECTOR, NAVY NURSE CORPS

It is with pride that I extend warm and sincere greetings to each of you on this Sixty-third Anniversary of the establishment of the Navy Nurse Corps.

During this past year, I have had the pleasure of meeting with many of you. Your desire for professional growth and marked leadership abilities have been an inspiration to me. We are living in a period of great change and the challenges we face are exciting and will demand the very best of all of us.

Your continued concern for improvement of nursing and your willing acceptance of your responsibilities as Nurse Corps officers will, I am confident, assure the success and future progress of our Corps.

My warmest personal regards and sincere best wishes for a very Happy Anniversary.

A handwritten signature in cursive script, reading "Alene B. Duerk", is positioned above the printed name.

ALENE B. DUERK
Captain, NC, USN



LTJG (now LT) Caren Lincoln consoles the son of a Navyman.

THE WHITE SHOE NAVY*

By JO2 Gene Costello, USN. (Photos by PH2 John Koppari, USN) Public Affairs Office, U.S. Naval Station, Subic Bay, FPO San Francisco.

They're affectionately known as the "White Shoe Navy." Their motto is support for the fleet, and their trademark is a smile. They're U.S. Navy nurses and anyone who's ever been under their care knows full well the meaning of the words "tender loving care."

"Lots of tender, loving care. That's what they give you here. I'm really going to hate to leave," is the way one sailor undergoing treatment at the U.S. Naval Hospital at Subic Bay, R.P., summarized his feelings about Navy nurses. Most of his fellow patients agree.

Among 16 Navy nurses working at the hospital, one gentleman sports an impressive red moustache. The

hospital is a 140-bed facility perched at the top of a hill, far removed from the hustle and bustle of the naval station and the adjacent Cubi Point Naval Air Station.

The mustachioed nurse is LT Charles Learned, of Hudson, Mass., a certified Registered Nurse Anesthetist, who came to the Subic Bay Hospital from the staff of the former NSA Hospital in DaNang, Republic of Vietnam. On May 13, he and his female co-workers will join the more than 2,000 other members of the Navy Nurse Corps in observing their 62nd year of caring for Navymen and their families. The Navy Nurse Corps was officially established on that date in 1908 by an Act of Congress, but its mission was described in 1811.

*Received for publication in May 1970.



LT Susan Williams, daughter of CAPT R. A. Williams, USN, comforts a patient.



LT Altine Bentson changes a bed at Naval Hospital Subic Bay, R.P.

At that time, Dr. William P.C. Barton, the first Chief of the Navy's Bureau of Medicine and Surgery, recommended the employment of nurses to "attend with fidelity and care upon all the sick committed to their charge."

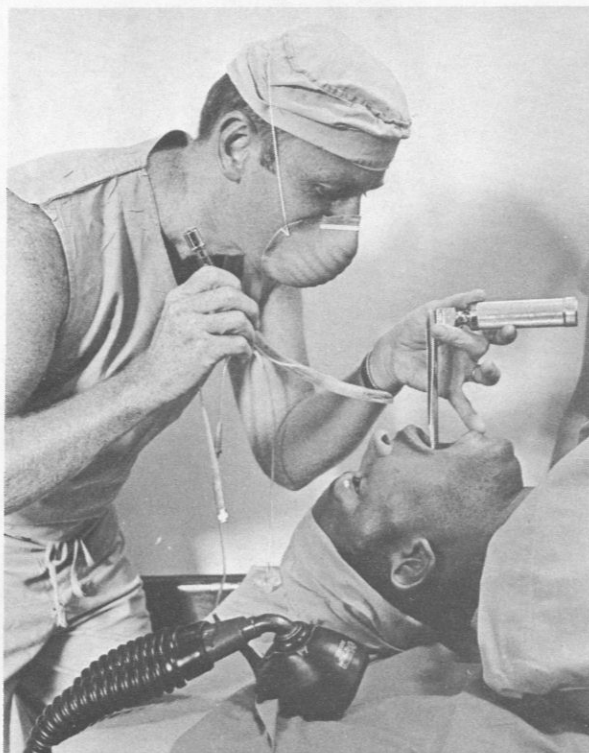
Although today's Navy nurses are far more skilled and technically competent than Dr. Barton may have envisioned, they are still carrying out the mission he outlined 160 years ago. There's much more to that job than meets the eye. The nurses at Subic for example, become involved in much more than direct patient care. Though concerned with the making of beds, giving baths and administering medication just like their civilian counterparts, they are also responsible for supervising the Philippine nurses and nursing assistants employed by the hospital, and training the Navy hospital corpsmen on duty there.

"Navy nurses are always teachers," commented CDR Anna Corcoran, a Navy nurse for 20 years and Chief Nurse at Subic. "A large part of our job is training the corpsmen. Although they have all completed Hospital Corps School, they have learned primarily the

basics and can profit further from practical experience in caring for patients. It is up to us to see that they receive the necessary on-the-job training to become competent and knowledgeable specialists."

The teaching situation also extends to include the patients themselves. "For instance," says Miss Corcoran, "if we have a patient with diabetes, it would be our job to assist that patient in learning how to live with his ailment, how to administer insulin to himself, and how to select the proper kinds and amounts of food to maintain the most desirable diet." In addition to acting as instructors, the nurses below the rank of lieutenant commander are students as well. They are expected to become familiar with the jobs performed by senior nurses, in order to eventually assume those positions.

The Subic Hospital resembles the type of general hospital found in many small American communities. It is designed to provide everything short of highly specialized procedures in neurosurgery for servicemen and their dependents. Many ships serving in the Western Pacific also send their sick and injured to the hospital



LT Charles Learned prepares to administer an anesthetic to a surgical patient.



LT Leona Aldrich answers questions for a Philippine visitor concerned about a friend admitted for treatment of an injury sustained at work.

for consultation and treatment. This adds to the responsibility of Navy nurses, according to CDR Elnora Cowden, Assistant Chief Nurse, because the civilian nurses and nursing assistants work only in the dependent wards. The Navy nurses care for all the military patients.

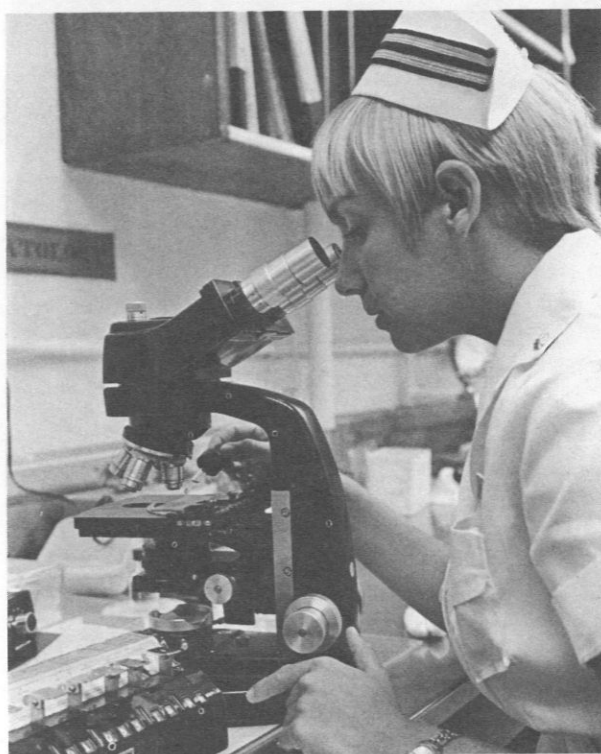
CDR Cowden also points out that when a Navyman is admitted to a navy hospital, he may be confined longer than his civilian counterpart. "In a civilian hospital," she remarked, "a patient is usually sent home to convalesce, but this is not possible in the Navy. When patients are discharged from Subic Hospital, they must be ready to return to work immediately."

In addition, the Subic Hospital cares for surgical and complicated cases referred by the Station hospital at Sangley Point Naval Air Station, R.P., and operates an outpatient clinic that treats as many as 4,000 patients per month.

Being a Navy nurse is a full-time job that requires hard work and dedication, but the nurses enjoy their work. No matter how busy they may become, they can always be counted on to provide that extra measure of kindness and a warm, friendly smile.



LT Melody King prepares to give an injection.



LT Melody King checks a blood study in the Hospital laboratory.

The recruiting pamphlets and brochures for the Navy Nurse Corps say Navy nurses are something special. One needs only to spend a little time in a Navy hospital to see the truth in that statement.

The foregoing article was regrettably received too late for publication in the May 1970 issue of this periodical. The sentiments expressed are just as timely in 1971 as they were in 1970, or any year. JO2 Costello said it rather well. We like his style. We particularly like the pics.

As the 63rd Nurse Corps birthday arrives in 1971, LT Charles Learned remains at the Naval Hospital Subic Bay, R.P. CDR Anna Corcoran will celebrate the Nurse Corps anniversary with fellow staff members at Naval Hospital Philadelphia, Pa.; CDR Elnora Cowden at Naval Hospital Portsmouth, Va.; LT Caren Lincoln at Naval Hospital Camp Pendleton, Calif., and; LT Susan Williams at Naval Hospital San Diego, Calif. LT's Leona Aldrich, Altine Bentson and Melody King have been released from active duty after completing their tours of AD. 🍀

RESUSCITATION WORKSHOP*

By LCDR Norma R. Coyle, NC, USNR, Nursing Service Educational
Coordinator, Naval Hospital Boston, Chelsea, Mass.

Background

Under the aegis of the Anesthesia Department, the Nursing Service Education Department at the Naval Hospital Boston, Chelsea, Mass., sponsored a four-session program designed to meet the needs of nursing personnel in cardiopulmonary resuscitation. A total of 193 participants included 12 military personnel from the Naval Hospital, and four civilian visitors from the community of Portsmouth, N.H. The first 30 minutes of each presentation were devoted to the anatomy of the cardiopulmonary system and the theory associated with resuscitation. Satisfactory technique was developed by the attendees through individual and group instruction tailored to the background of the participating audience. Particular emphasis was placed on the early institution of basic cardiopulmonary support technique. Multiple sessions were conducted to ensure availability of this instruction to all ward personnel.

Instruction

LCDR Arthur E. Yahn, MC, USNR lectured and demonstrated the fundamental concepts of effective lifesaving techniques. LCDR Yahn began his lecture by reminding participants that a patient's chances for survival depend upon the early initiation of adequate ventilation once his own breathing ceases. Dr. Yahn emphasized the need to call for help at once while simultaneously instituting ventilation if breathing has ceased. Closed chest cardiac massage should be initiated if blood circulation is absent. He stressed the need to evaluate the situation rapidly and to *work fast*, because the patient will sustain irreversible brain damage if adequate ventilation is denied for more than four to six minutes. The prompt arrival of crash carts, diagnostic equipment and the finest pharmaceuticals

is no substitute for an organized and rapidly instituted regimen of basic cardiopulmonary resuscitation.

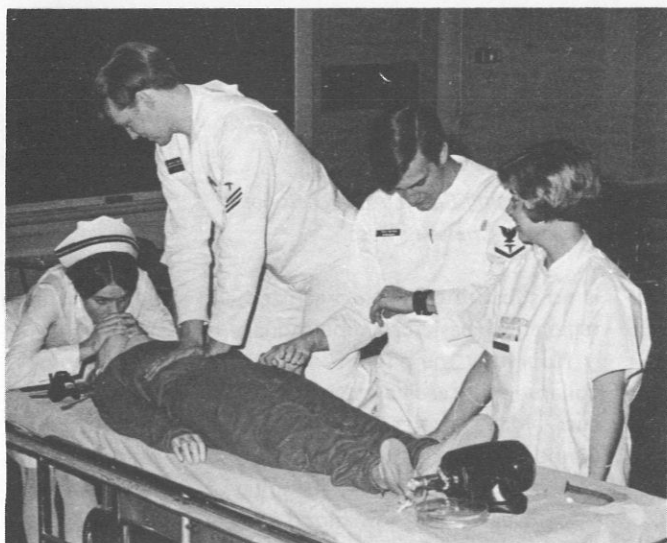
Hopefully the patient in incipient cardiopulmonary collapse will receive attention before actual arrest occurs. Many arrests could be averted if all personnel would take active notice of any sudden deterioration in a patient's condition. Gasping or shallow respirations, weak pulse, low blood pressure, and a gray or blue skin color herald the onset of potential disaster and should be promptly brought to the attention of the attending physician.

Resuscitation Techniques

When arrest occurs, the first therapeutic requirement is to secure a clear airway. This may usually be achieved by manually removing any foreign material from the upper airway and hyper-extending the neck, pulling upward and forward on the jaw. An oral airway device may be most useful. If the patient does not exchange air at the juncture, positive pressure ventilation must be started. The nose should be sealed off if a mouth-to-mouth technique is used. An Ambu bag with mask can be employed here, or the rubber mask may be removed from the Ambu bag to permit a mouth-to-mask technique.

Whatever method is utilized, the patient's chest must be observed in order to evaluate adequacy of treatment. The chest should move obviously when positive pressure is adequately applied. If the patient's chest does not move when an operator strives to provoke ventilation, a change to a simpler technique is indicated. A mouth-to-mouth or mouth-to-mask technique seems to work best for the less experienced operator. Dr. Yahn has encountered many arrest situations, he reported, where the room rather than the patient's lungs received most of the ventilation because of faulty technique in using an Ambu type bag. Adequate ventilation can be achieved by any of the measures described and the lack of an endotracheal tube is never sufficient cause to delay ventilating a patient. Dr. Yahn reminded participants that the first individual to arrive at the scene must commence positive pressure ventilation of the patient in respiratory distress.

*Acknowledgement: The author wishes to acknowledge the source of information contained in this paper as that presented during the course of instruction, "The Current Concepts in Cardiopulmonary Resuscitation," by LCDR Arthur E. Yahn, MC, USNR, Anesthesia Department, Naval Hospital Boston, Chelsea, Mass., at the workshop held on 26-27 January 1971.



(L to R) ENS Wernimont, HN Spencer, HM3 Hasselbacher, and HM3 (W) Litchfield function as an efficient team restoring respiration, initiating closed chest cardiac massage, and checking the circulation to evaluate effects of resuscitation.



(L to R) HN Pierce, LTJG Zettler, and ENS Wernimont watch for chest movement as a sign of effectiveness of resuscitation using mouth-to-mask technique.



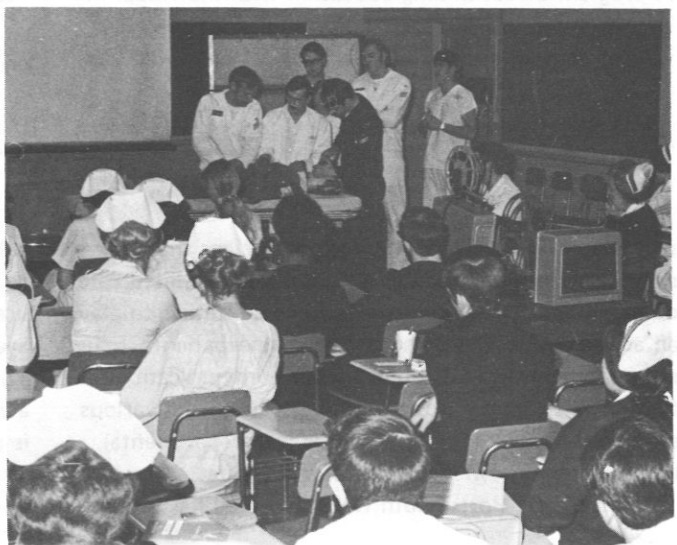
(L to R) HM3 Hasselbacher, HN Pierce, and HN Meinert acquire practical experience in the correct application and operation of the Ambu bag.

(L to R) LTJG Zettler, HN Pierce, HN Meinert, ENS Wernimont, and HN Curtis await their turn as HA Crowell gains experience in the mouth-to-mask method of resuscitation.



LCDR Yahn, MC, USNR observes for correct technique as LTJG Kingsbury and ENS Wernimont practice efficient action in resuscitation. ENS Camarra, HM3 Nikonchuk, LTJG Zettler, HN Spencer, HM3 Hasselbacher, and HM3 (W) Litchfield await their turns.

The audience observes as others gain practical experience in the resuscitation procedures presented by Dr. Yahn.



Calling the Anesthesia Department or fumbling with laryngoscopes and endotracheal tubes does not relieve the individual of this responsibility. The time to learn how to use artificial ventilation equipment is not the moment when one encounters his first case of arrest. A certain amount of skill should be acquired beforehand to ensure the necessary capability of executing effective ventilation techniques.

Once the patient is adequately ventilated, cardiac output must be clinically assessed by checking the femoral or carotid pulses. If no pulses are presented, closed cardiac massage must be instituted. The return of pulses is the hallmark of adequate closed chest cardiac massage, but maintenance or reduction of pupil size may also indicate effectiveness of massage.

Potential Problems

Various complicating problems may hinder the effort or confuse the evaluation of cardiopulmonary resuscitation effectiveness. Some of the difficulties considered were: (1) the jaw which has been destroyed by trauma with soft tissue obstructing the airway; (2) the patient without teeth or with dentures present; (3) the aspiration of food with airway obstruction; (4) the drowning victim and problems presented by salt water vs. fresh water aspiration; (5) the patient who sustains a cardiac arrest while on a ventilator.

Need for Continuous Training

"I have seen very few arrest procedures where all the participants have contributed positively to the resuscitation effort. A confusion in priorities appears to be the most common problem," commented LCDR Yahn. A program of continuing education with individual instruction and use of resuscitation models is the only way to prepare and maintain a hospital team that can

be relied upon to adequately handle the patient who sustains a cardiac or respiratory arrest. Dr. Yahn reiterated the importance of the early institution of basic cardiopulmonary support techniques and a call for help, the fundamental basis for a successful contribution by paramedical personnel.

Summary

"Learning by action" was the theme of the program designed to teach nursing service personnel the approach to lifesaving. According to LCDR Yahn, such a program should be repeated every four months for the benefit of new members of the staff, as a refresher for those who have previously attended, and for personnel who were precluded from attending before while on leave or other shifts.

When you find a person unconscious, determine whether or not he is breathing. Listen and feel for breathing. Watch for movement of the chest. Should no breathing be noted, lift the neck and tilt the head back to establish a clear airway; breathe for the patient/victim; check his circulation. *Don't quit* — keep breathing for the patient until he is able to breathe on his own. The second person can get the blood circulating by compressing the bottom third of the sternum (a little below the nipple line). Make sure the patient is on a firm surface. As soon as the patient can be taken to a hospital, a cardiac monitor will be attached, oxygen will be started or maintained, and appropriate drugs, close observation, and the expert care of C.C.U. personnel will become immediately available. Dr. Yahn advised: "Practice and rehearse until a correct and effective sequence of treatment is attained. It is too late to learn correct cardiopulmonary resuscitation technique when you encounter your first arrest." These were the concluding remarks of a two-day workshop where "effective action" was advocated. ☸

(Continued from p. 16)

physician. The Respiratory Care physicians then assume responsibility for the respiratory and related care of the patient. The admitting service continues to play an active role in the 24-hour care of the patient. Efficiency largely depends upon proper communication between the services. Rotation of residents from various services through the unit enhances interdepartmental relations and knowledge of respiratory care.

In summary, Portsmouth Naval Hospital has estab-

lished a four to six-bed Respiratory Intensive Care Unit to meet the special needs of patients in respiratory failure in a more efficient manner than was previously available. The unit is staffed by a full-time physician, 16 corpsmen, and four nurses. Although the unit is awaiting funds to accomplish complete renovation, it is presently functional, efficient, and represents a vast improvement over previous accommodations for patients in acute respiratory distress. ☸

FIRST U.S. NAVY RESPIRATORY INTENSIVE CARE UNIT

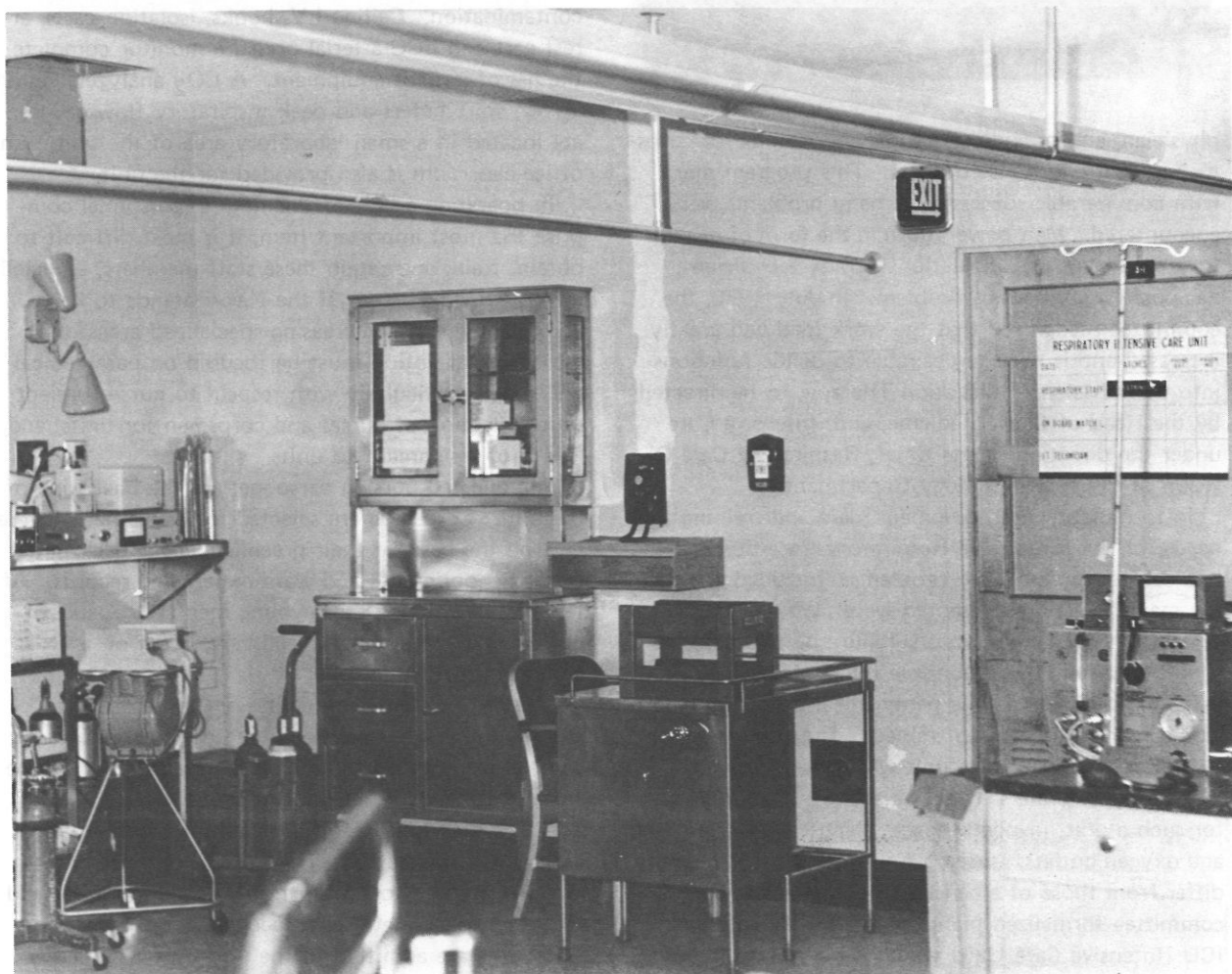
By LCDR L. W. Stringer, Jr., MC, USN, Chief, Respiratory Intensive Care Unit; Naval Hospital, Portsmouth, Va.

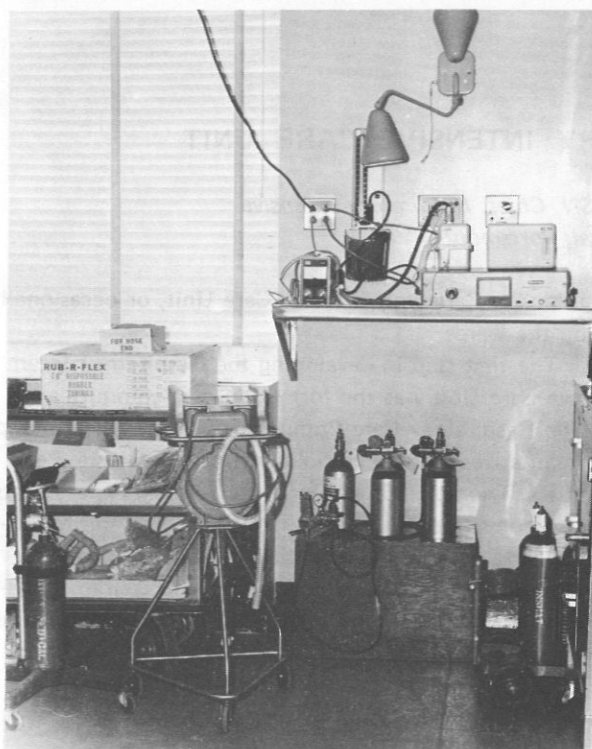
The Naval Hospital, Portsmouth, Va., has opened the first Respiratory Intensive Care Unit in the Navy. This unit represents one year of planning and work.

The Naval Hospital, Portsmouth is a 1600-bed general hospital with a multi-specialty training program. One year ago the need for a more programmed approach to treatment of patients in acute respiratory failure was recognized. At that time patients who required intensive conservative respiratory care or continuous ventilator care were managed by the patient's service. Care was provided in the 20-bed general

Intensive Care Unit, Cardiac Care Unit, or occasionally on the wards.

The first step in developing the Respiratory Intensive Care Unit was the formation of a committee — The Respiratory Care Committee — composed of representatives of Anesthesiology, Chest Medicine, Pediatrics, Thoracic Surgery, and the Nursing departments. The committee assumed responsibility for the following tasks: directing inhalation therapy; providing a 24-hour watch to assist in the care of respiratory distress patients when requested by the patient's attending





physician; and providing lectures and rounds for corpsmen, nurses and house officers. This program met with considerable success, but many problems were encountered. Man power, both in the form of respiratory physicians and inhalation therapy technicians, has posed a continuous problem. In July 1970, the committee recognized that the work load had greatly increased and it became desirable to divide functions into two divisions: Inhalation Therapy, to be directed by the Head of Chest Medicine, and; Intensive Care under the direction of the Chief, Respiratory Care Division of the Anesthesiology Department.

In formulating the equipment, care and training needs for the future, the Respiratory Care Committee was confronted by many problems. Included among the major questions presented were: Where should the patient with acute respiratory failure be treated; who should be primarily responsible for his respiratory care, and; how would the paramedical personnel who would render the care be trained? The concept of a respiratory intensive care unit was considered important in meeting the selected objectives. Requirements for such a unit, involving space, electrical gear, suction and oxygen outlets, nurse::patient ratios, etc., uniquely differ from those of a general intensive care unit. The committee formalized plans for a six-bed Respiratory ICU (Intensive Care Unit) which were sent to BUMED for further consideration. In view of the immediate

need for managing approximately 160 patients in acute respiratory failure each year, the Anesthesiology Service proposed an interim plan to utilize the planned space for opening a functional unit with minimum cost and modification.

The space allotted accommodated four beds, with 180 square feet allowed for each bed, and two additional beds on the perimeter of the unit to be shared with the general Intensive Care Unit. This enhances bed utilization by both units. The two additional beds have the same square foot space allowance as the other general ICU beds, but they are used for conservative care rather than for ventilator cases. Each bed has eight grounded electrical outlets available with emergency power. All eight outlets serving a patient unit have zero potential. There are three suction, one compressed air and four oxygen outlets per bed. Each bed has shelf space above and to the side, for equipment and supplies tailored to meet the needs of the individual patient. Personnel re-supply the bed units every eight hours. This not only saves time but also decreases the possibility of cross contamination. Ceiling I.V. hooks, isolation carts, arrest cart and ECG-arterial pressure monitor complete the list of patient equipment. A CO₂ analyzer, O₂ analyzer, spirometers and peak inspiratory flow gauges are located in a small laboratory area of the unit. An office-classroom is also provided for the unit.

In operating a unit of this nature, personnel comprise the most important item; it is most difficult to obtain, train, and retain these staff members, especially in the Armed Forces. If the Navy intends to keep abreast of the ever increasing specialized areas of patient care, attention must be focused on paramedical personnel, particularly with respect to nurse::patient ratio, selection of nurses and corpsmen for units, and length of assignment to units.

The enlisted nursing personnel are the backbone of the unit. Corpsmen are selected for assignment to the unit on the basis of their preenlistment and Hospital Corps School grades and ward experience records. After suitable training these young men are capable of providing excellent specialized care, often on a 1::1 patient ratio.

A 50-hour orientation course and at least four months of closely supervised bedside experience are completed by all corpsmen and nurses assigned to the unit. A procedure manual was prepared and is considered a prerequisite for any well organized training program of this nature. The manual contains three sections devoted to administrative, standing order and academic considerations, respectively.

Patients are admitted to the unit by the patient's service when accepted by the Respiratory ICU

(Continued on p. 14)

HOSPITAL CORPS SCHOOL

VIEWED BY AN INSTRUCTOR

*By LCDR Alyce M. Hines, NC, USN, and CAPT Teresa Butler,
NC, USN; Hospital Corps School, San Diego, Calif.*

Soon, my tour of duty at Naval Hospital Corps School, San Diego, Calif. will be completed and I shall embark on a new adventure in another place concerned with a different aspect of military nursing. But before I leave there is time to recall the experiences, the fears, the frustrations and the satisfactions of the past two years.

Orders to Hospital Corps School came as a complete surprise. My first thought was: "Just what do we teach?" Never before had I taught in the formal classroom situation and, to be frank, I was apprehensive. Yet, 26 months later the apprehension has been dispelled and replaced by the hope that I have given as much to Hospital Corps School as it has given to me.

Soon after arrival in San Diego I attended Instructors' Training School at the Naval Training Center, as is customary for Nurse Corps officers assigned to Hospital Corps School. This intensive course is devoted to fundamentals of teaching, the use of audio-visual aids, the construction of lesson plans and useful tests. In addition, several sessions are devoted to practice teaching the other course participants, an experience of inestimable value to me when I was subsequently faced with a class of young Hospital Corps hopefuls.

Upon completion of Instructors' Training School I returned to Hospital Corps School and began a period of orientation. The course, "Principles and Techniques of Patient Care," is taught by Nurse Corps officers of the Hospital Corps School staff. The 14-week curriculum (now lengthened to 16 weeks) included 180 hours of instruction (lectures and demonstrations) and laboratory experience related to patient care. Demonstrations are followed by several hours of practical instruction in the laboratory where teaching is conducted on a one student to one Nurse Corps officer basis. part of my own orientation, I observed the teaching techniques employed by other instructors in the classroom situation. By assisting in the laboratory sessions, I gained confidence in my own teaching ability and learned to appreciate the herculean effort made by students as they attempt to develop some facility in handling the necessary equipment.

Following the weeks devoted to class work, the students are assigned to the Naval Hospital for clinical experience. While serving as one of the Clinical Instructors there during my orientation, I was not only impressed by the students' eagerness to learn but also by the willingness of the ward nurses and physicians to teach them. Even the patients contribute to the learning experience; they taught me many lessons, not the least of which is their gracious acceptance of our students.

After completing orientation, my first company was assigned. I began by perusing the roster of students which contains much information about their previous education, potential, civilian experience and personal interests. Next, I talked with the company petty officers and together we explored their duties. The Adjutant and Assistant Adjutant occupy leadership positions and accept responsibility for decorum in the classroom and laboratory. In addition these men "muster" the group to keep me informed concerning absentees and latecomers. Educational petty officers are responsible for collecting homework assignments, assisting in the classroom and laboratory when needed, and helping students in academic trouble. In a conference with the audio-visual men, plans were formulated concerning the various training aids which I would require during the course of instruction. As the program developed these men proved to be a great asset since their efficiency and skill in operating movie projectors enhanced the continuity of presentations. Instructors at the Naval Hospital Corps School are invariably impressed with the caliber of men who serve in all of these special jobs.

The term "Company" in the context of Hospital Corps School should be defined. Each week a group of students is admitted, or as we say: "A company is formed." Two factors which determine the size of the company are berthing and classroom space, purely physical limitations. More than 65 students cannot be accommodated with the present resources and, in my opinion, an ideal company consists of 40 men. Students come to us from a variety of places, such as one



LCDR Hines, NC, USN at Graduation. Hospital Corps School XO, CAPT R.E. Hunter, MSC, USN is seen at extreme left.

of the Navy's "Boot Camps," from sea duty, from Reserve units, from the Coast Guard and from various other sources which would include foreign nationals. When the number of students exceeds 60, it becomes necessary to form two companies in one week. Since new students are admitted every week, one or two companies graduate per week, and each Thursday is graduation day.

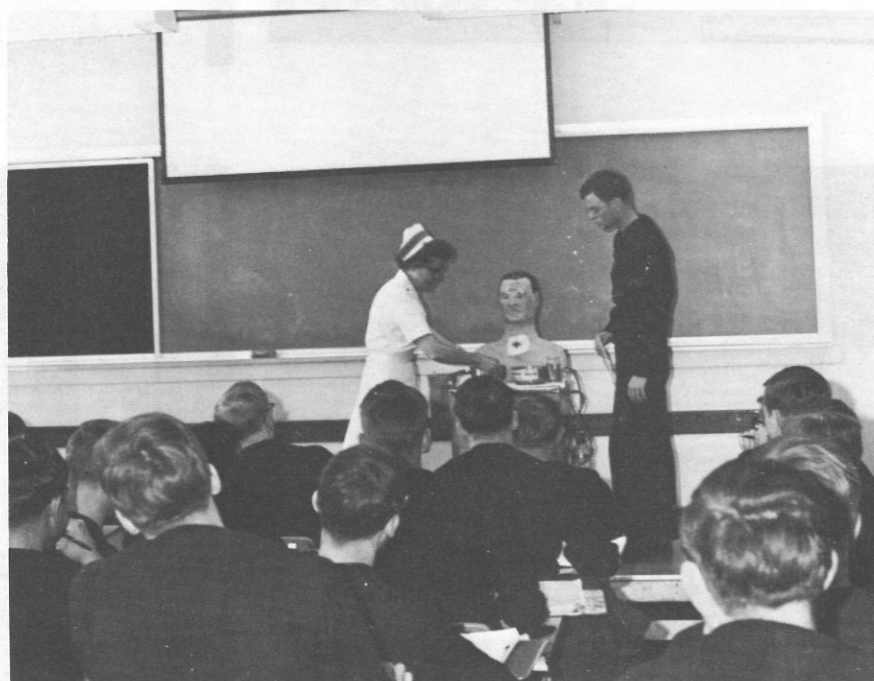
My first knowledge of a company was gleaned from interviews with the petty officers. This was followed by a debut as an instructor. My entrance into a classroom was attended by considerable anxiety when, in response to the Adjutant's "Attention on deck," a group of 55 young men arose to stand at attention until I reached the podium. Hoping my trepidation was not apparent, I launched an introduction and briefly outlined my professional background. Then, the lesson so painstakingly prepared, commenced. The time seemed to rush along until a quick glance at the clock revealed that only ten minutes had passed. Soon the men began to ask questions and the challenge of the classroom made itself felt, for the session ended more quickly than it began. Each day the lectures became

less difficult to deliver and the students remained alert and interested. There was little time for gratification at this juncture, however, for the approaching baptism-of-fire would be the first laboratory session when the men learn to take temperatures, pulse and respiratory rates on each other. The laboratory session occurs during the second week. It seemed to me that formidable obstacles awaited the company.

Fearing every possible mistake in technique, one anticipated the sound of shattering glass as delicate thermometers encountered vigorous shakedown. Were the students receiving adequate instruction? How would they perform in the laboratory situation? Would the other instructors understand and appreciate the students in whom I placed such empathic faith? As it happened, the laboratory program ran smoothly, and the men were a credit to their teachers. Just as the lectures became less formidable, so did the laboratory sessions become easier to manage. Soon the students were ready to report for clinical instruction in the Naval Hospital. The period of clinical instruction lasted but one week at the time; it now extends over a period of two weeks.

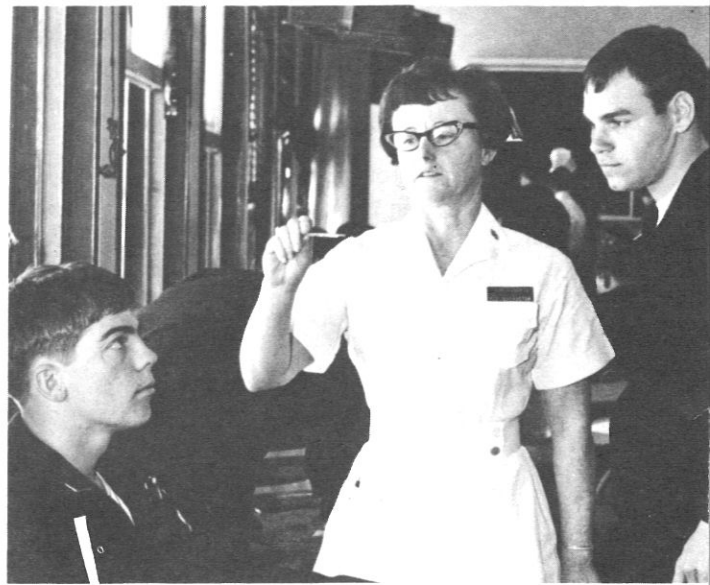
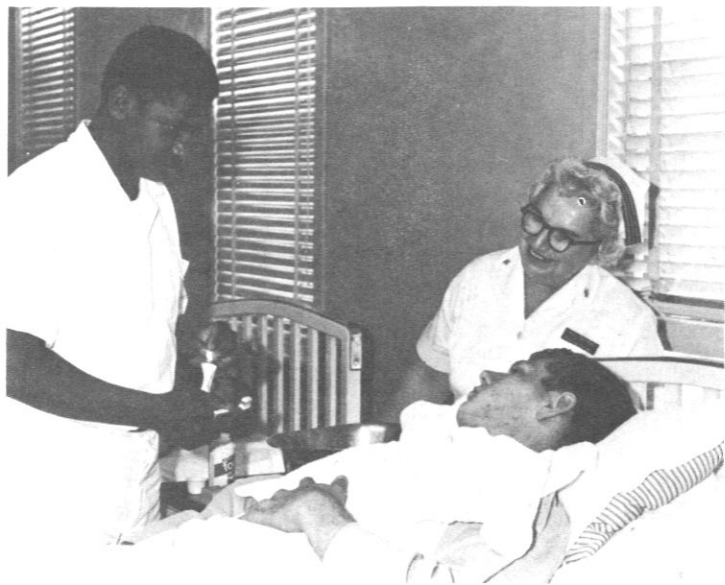
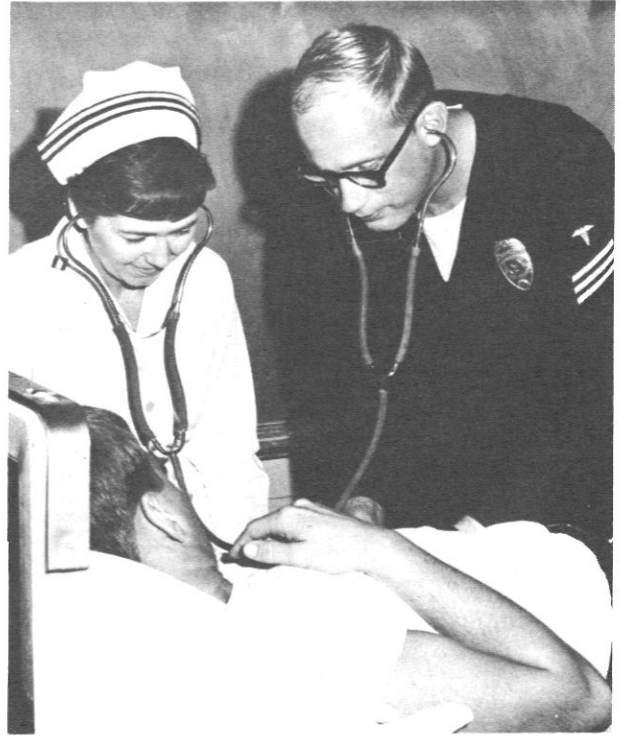


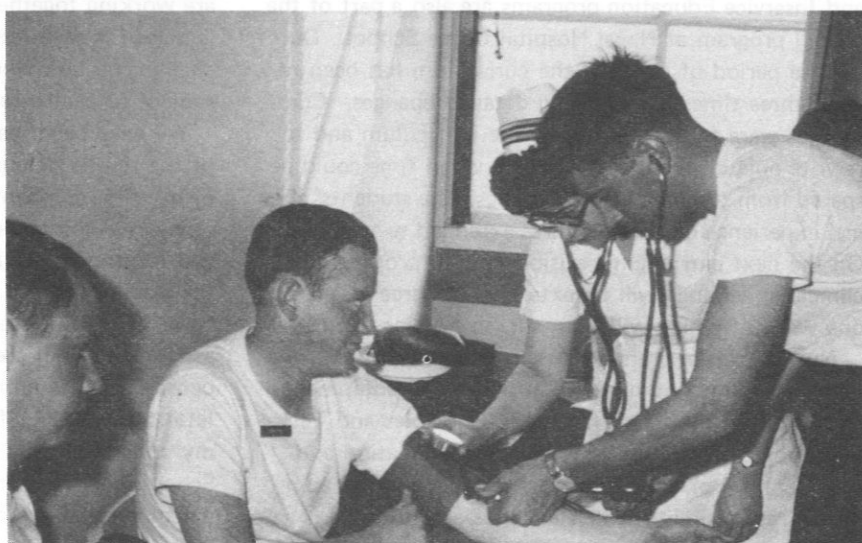
LCDR Spence in
the classroom.



LCDR Spence provides a
demonstration in the class-
room.

"LABORATORY SESSIONS"







CAPT J. Morgan, MC, USN and Nurse Corps Officers at inservice meeting.

With a subsequent increase in work load, it became necessary for many of the Nurse Corps officers to teach two companies, one from 0700 until 1000 and the second from 1200 until 1500. Homework correction and committee projects further compromised available work, and sometimes free, time. Concomitant projects, committee memberships, curriculum revisions and Inservice Education programs are also a part of the overall program at Naval Hospital Corps School. During the period of my tour the curriculum has been revised three times necessitating detailed changes. Committees were formed to review the curriculum and to rewrite objectives and lesson plans, when time could be spared from teaching responsibilities. The students' clinical experience of one week was extended to two weeks. On the next curriculum revision now in progress, the clinical experience will be extended to three weeks, one week of which will be spent on evening duty.

Nurse Corps officers are assigned to committee work involving the maintenance of supplies and equipment employed by the course entitled "Principles and Techniques of Patient Care." Frequent examination and consideration of audio-visual material is another committee responsibility which includes a continuing

survey of new educational materials. Plans for inservice meetings are formulated by committee and much information on current trends in patient care is disseminated at monthly and bimonthly meetings. Physicians on the Naval Hospital staff generously contribute their time so that our education will remain dynamic. All of the Nurse Corps officers at the Naval Hospital Corps School are working together on a complete review of the objectives for each lesson plan. It is an ambitious and challenging task wherein even the lowly preposition is subject to challenge!

We have been teaching long enough to witness some of the results of our labors. Men who were members of my first company and who were in the Naval Reserve have completed their tours of obligated service and returned to civilian life, many of them to continue their education. A number of students have completed Navy "C" schools and they are now serving in special assignments. All are working at Naval hospitals and dispensaries and a number have served in Vietnam. Often letters are received from them which serve to strengthen my conviction that teaching in Naval Hospital Corps School is indeed a rewarding experience and source of personal satisfaction that will long endure. ☸

OBSERVATIONS ON THE DOCTOR DRAFT AND THE UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES — H. R. 2

*Presented by Louis M. Rousselot, M.D., F.A.C.S., Assistant Secretary of Defense
(Health and Environment) to The Executive Council of the Society of Medical
Consultants to the Armed Forces, on 16 April 1971.*

Dr. Pisani and members of the Council of the Society Of Medical Consultants To The Armed Forces, I appreciate this opportunity to briefly review with you our position on the impending legislation to revise the Military Selective Service Act of 1967 and on H. R. 2.

Any consideration of the Draft Law must be in close context with the All Volunteer Force concept. All of us are quite aware of President Nixon's avowed purpose to have such a force by 1973. It is my personal opinion and observation that the majority of physicians in this country support the All Volunteer proposals as highly desirable. Likewise, I believe they will support any reasonable proposals which will insure the maintenance of a Career Military Medical Corps.

This Council is acutely aware of student attitudes as well as the ferment among interns and residents over many issues which they view as abdication by our generation. They see our National problems as in some way reflecting the worst in America and we are held responsible.

High on the medical students' and house officers' list of grievances against our society is the Draft.

The Draft is a highly charged issue, and has for some time incurred the wrath of many physicians and dentists because of what they view as discriminatory provisions aimed at their professions. I think it appropriate, therefore, to discuss in some detail our approach to the Draft for members of the Health professions.

The so-called "Doctor Draft" which, incidentally, may be applied to members of all Health professions, has been in use on an uninterrupted basis since 1950. Initially it included all doctors up to age 51. In 1957 the law pertaining to drafting of doctors was permitted to expire and our needs were met under the authority of the General Draft, with one additional proviso, as follows:

"Provided further that nothing herein shall be construed to prohibit the President under such rules and regulations as he may prescribe. . . for providing for the selection or induction of persons qualified in

needed medical, dental or allied specialist categories pursuant to requisitions submitted by the Secretary of Defense."

Under this proviso any medical, dental or allied specialist who obtained a student deferment prior to age 26 is subject to special draft calls until age 35. This has been our authority for the past 13 years. Without it we could not have survived until today; without a similar provision we will not be able to meet our needs tomorrow.

Our current requirements for physicians and dentists are 15,050 and 6,500, respectively. By June 30, 1972 we estimate that these requirements will be reduced to 14,000 physicians and 6,000 dentists. In the interim, we estimate that we will have to obtain approximately 4,500 physicians per year and 1,900 dentists per year for active duty in the Armed Forces. Under existing personnel programs and policies, it will be impossible for us to obtain any significant portion of these doctors without the impetus of a draft.

The question of the Lottery and its applicability to physicians arises with increasing frequency. Simply stated the Lottery does not apply to physicians, dentists, veterinarians, optometrists and osteopaths over age 26. This immediately raises, as it has with many students, and particularly with the more vocal student advisors, the specific issue of "double exposure" for individuals who, after experiencing a Lottery Draw and were not called to serve, then proceeded to medical school.

The issue of "Double Exposure" or "Double Jeopardy" has been considered by the National Security Council. That body accepted it as a fact of life involving a scarce pool of manpower and as necessary to provide for adequate medical care in the military services.

With the necessity of a Draft Call this year it is our understanding that among those 26 years of age and over, the youngest will be called first. Those under 26 years will be called in order of their random sequence number. However, as you can appreciate, the number in this group is not large.

Notwithstanding our need for the Draft in the next two years, we have been forced to reconsider our future reliance upon it. The President has emphasized his desire to move to an All-Volunteer Armed Force and he has requested that the Draft only be extended for two years. When the Administration submitted its Draft Proposal this year and recommended that student deferments be abolished, no special provision was recommended for members of the Health professions other than the proviso which I quoted earlier. This means that any person who has previously received a student deferment will continue to be liable for the Draft until age 35. But, if student deferments are abolished then our Health Draft Pool will not in the future include those who have attained the age of 26. The inescapable conclusion is that we must move to an All-Volunteer Force of Health Professionals within two years if that is the period for which the Draft is extended. But even if it subsequently becomes necessary to continue the Draft beyond that point, we will only have about a five or six year supply of persons who will have any Draft liability at the time they complete their professional education by virtue of having received a student deferment and II-S classification by Selective Service.

At this point, we do not know for certain that All-Volunteer medical departments are possible or practical. But we do know that unless we have bold and imaginative new approaches in the field of medical personnel management, we will be totally unsuccessful. We have developed a number of such approaches and we expect to seek necessary policy or legislative changes that will permit us to attempt them. Among these approaches are competitive compensation for Health professions; establishment of Uniformed Services Universities of the Health Sciences; increased opportunities for clinical investigators; personalized career planning; increased medical scholarships; improved promotion system; establishment of a Medical Command System; increased use of Allied Health clerical and other support personnel; and greater opportunities for continuing education.

I believe that we can expect to receive considerable support from the AMA in the area of improving career attractiveness and career retention for our physicians.

The new approaches which I just noted must be considered as a package. For too long efforts aimed at improving the careers of our physicians have been piecemeal and often as not were considered by many as "too little-too late."

We cannot allow complacency to influence us. Stringent reviews of physician manpower utilization in the three military Medical Services must go forward.

I am unaware of "waste" in the context with which that word is often used but I am convinced that without constant attention to utilization policies we may be accused of wasting physicians.

Our retired service people and their dependents together with dependents of active duty personnel are entitled to care in our facilities stemming from tradition and stature. I would hate to see the day when we abandon our own. Every level of command must emphasize why we take care of these categories and explain the necessities which require that the drafted physician provide part of that care and that their participation in the military Health Care Delivery Team is clearly not a waste of either time or talent. We know what CHAMPUS has done and is doing. Likewise we know that many military installations in CONUS and virtually all those overseas have limited or no adequate civilian physicians immediately available to provide proper care to these deserving people. None of us like the Draft and hopefully The Congress will be able to help us reduce our need to use it.

In support of the Administration's position on the extension of the Draft, we would like to be "All-Volunteer" at the end of that time. If this is not possible we will have to seek a further extension. But under the proposed changes to the Draft Law, we will have to reach this goal before the current pool of draft eligibles is exhausted.

At this time I would like to offer a few comments on H. R. 2. Representative F. Edward Hebert, Chairman of the House Armed Services Committee, advises me that he intends to initiate hearings on this bill this spring, probably the next major item of business for his House Armed Services Committee after the hearings on the Draft are completed. Mr. Hebert wanted the new bill to also be known as H. R. 1 — I recommended against it because the similarity in numbers would not serve to delineate the differences in the eyes of the medical public and more especially in the eyes of the Association of American Medical Colleges (AAMC) and The American Medical Association. Fortunately Mr. Wilbur Mills got H. R. 1 for his Social Security Measure.

I know you will bear with me when I say that many preliminary comments could perhaps preempt the hearings. Therefore I will confine my remarks to general observations. I have a copy of the bill for each of you in the event you have not seen it. I urge you to take it with you and give it your study and I hope vigorous support. I am convinced the University of the Health Sciences is needed, and now. There is not a scintilla of doubt but what it will make our career military medical corps a reality as well as add to the total

(Continued on p. 27)

THE HEMATOLOGISTS' CORNER —

APLASTIC ANEMIA

*By LCDR Michael A. Habib, MC, USN, and CDR Richard A. Burningham, MC, USN;
Hematology Branch, Medical Service, Naval Hospital, Philadelphia, Pa.*

Aplastic anemia, defined in the simplest way, is that clinical state characterized by a reduction in all the circulating elements of the blood (pancytopenia) in association with reduced or absent numbers of bone marrow precursor cells (marrow hypoplasia or aplasia). Although the disease was first described by Ehrlich in 1888, it has gained increasing attention in recent years because of its iatrogenic etiology in many instances, and the fatal course it often pursues.

There are both congenital and acquired forms of aplastic anemia. The congenital syndromes are rare, and usually appear in conjunction with other abnormalities, both physical and mental. Among these disorders are the rare Blackfan-Diamond syndrome and the better known and more common Fanconi syndrome.

Acquired aplastic anemia is seen in a variety of clinical disorders, among which are infectious hepatitis, paroxysmal nocturnal hemoglobinuria (PNH), and thymoma. The last is more commonly associated with pure red cell aplasia. Usually, aplastic anemia follows exposure to ionizing radiation, certain toxins and drugs. The last category includes a great many agents, encompassing all therapeutic modalities.

In spite of a growing list of drugs suspected of causing aplastic anemia (Table I), approximately 50% of all cases are classified as "idiopathic" since the causative agent cannot be defined. A more complete list can be found in the Registry on Adverse Reactions, Council on Drugs, American Medical Association, May 1965 and June 1967. In addition, many of the chemotherapeutic agents used in treating the acute leukemias, malignant lymphomas, myeloma and solid tumors regularly produce hypoplasia of the marrow. Although the mechanisms of action of these latter drugs are of great interest, they will not be further considered here, since the hypoplasia is an expected and sometimes desirable phenomenon.

The opinions expressed herein are those of the authors and cannot be construed as reflecting the views of the Navy Department or of the naval service at large.

Table I

Drugs Associated With Aplastic Anemia

Chloramphenicol

Sulfonamides

Sulfamethoxypyridazine

Sulfisoxazole

Tolbutamide

Carbutamide

Analgesics

Acetylsalicylic acid

Phenylbutazone

Anticonvulsants

Diphenylhydantoin sodium

Methylphenylethylhydantoin

Trimethadione

Benzene

Solvents

Insecticides

Gamma benzene hexachloride

Chlordane

Chlorophenothane (DDT)

Gold salts

Others:

Acetazolamide

Amphotericin B

Chlorothiazide

Chlorpheniramine

Chlorpromazine

Chlorpropamide

Colchicine

Penicillin

Phenacetin

Potassium perchlorate

Pyrimethamine

Quinacrine

The pathogenesis of the acquired aplastic anemias is not completely understood. Probably all of the agents

that damage the marrow (including the virus of infectious hepatitis), do so by affecting the marrow stem cell. It has been postulated that this cell, considered to be the precursor of all the formed elements of the blood, suffers genetic damage resulting in aberrant or retarded maturation, followed by marrow hypoplasia.

Special restrictions placed on the use of chloramphenicol have engendered much controversy in recent years and serve to focus further discussion, since this antibiotic has been implicated as one of the major causes of drug-induced aplastic anemia. It should be emphasized, however, that the overall incidence of chloramphenicol-induced aplastic anemia remains rather low, with the incidence reported to be one in 60,000 to one in 800,000 administrations. How this drug exerts its action is not certain, however, *in vitro* studies have shown rather significant inhibition of RNA, DNA and protein synthesis. It must be noted that the amount of drug required to bring about these effects is far greater than that administered to patients in therapeutic dosages.

Certain observations made in recent years may help to illuminate the area of chloramphenicol toxicity. Suhrlund and Weisberger studied a group of 18 patients, nine of whom developed hematologic toxicity from chloramphenicol. Following intravenous injection of the drug (500 mg), the blood was assayed for free chloramphenicol concentration at periodic intervals. In the "toxic" group, blood levels ranged from 2.8 – 6.9 mg/ml six hours after injection, whereas the blood levels of chloramphenicol in the nontoxic group ranged from 0 – 2.3 mg/ml. Commenting on the development of aplastic anemia in identical twins who received chloramphenicol, Dameshek postulated that an inherent abnormality in their liver capacity to conjugate chloramphenicol might have been responsible. Although these observations do not resolve the questions surrounding the mechanism of action, they do suggest that the individual who develops toxicity from chloramphenicol may possess an inherited defect concerned with processing the drug, akin to the rapid and slow "acetylators" of INH.

After analyzing several hundred cases of chloramphenicol-induced hematologic toxicity, Yunis and Bloomberg concluded that two types of toxicity existed. The first was manifested as anemia with a normocellular bone marrow in most cases, and was thought to be related to the antibiotic dose and duration of administration. The hematologic changes appeared during therapy with the drug and completely reversed upon withdrawal of the drug. In contrast, the second type of toxicity was characterized by pancytopenia associated with a hypoplastic or aplastic

marrow; there was no relation between drug dose and duration of administration and the appearance of aplasia. Most significant, however, was the finding that aplasia occurred between two weeks to five months after the administration of chloramphenicol. Although this dichotomy is not universally accepted by others, it reflects an interesting analysis of the problem.

Clinically, the patient with aplastic anemia presents with a pancytopenia: normal-sized red cells and hemoglobin content (normocytic, normochromic anemia), an absolute or relative lymphocytosis and thrombocytopenia. The patient generally will present with symptoms of weakness and fatigue, depending on the severity of the anemia. However, bleeding and petechiae may represent the dominant manifestations. Although said to occur infrequently, hepatomegaly, splenomegaly and lymphadenopathy were found in 22%, 34% and 24%, respectively, of the patients reported by Mohler and Leavell. Bone marrow aspiration usually produces only a few marrow particles or none at all. The particles, if present, are usually fatty and contain an admixture of mature lymphocytes, plasma cells and histiocytic forms. At times, a diagnosis of lymphocytic leukemia has been made because of the relative increase in the number of lymphocytes. Another characteristic feature of chloramphenicol toxicity is the vacuolization of the early red cell precursors following administration of the drug. This is generally noted in the dose-related form of chloramphenicol toxicity. A marrow biopsy will confirm the presence of a hypoplastic state and rule out evidence of an infiltrative process (leukemia, lymphoma, carcinoma, myeloma or fibrosis). Other pertinent laboratory features usually include elevated serum iron values with increased saturation of the iron binding globulin (transferrin), reticulocytopenia and lack of polychromasia in the face of a severe anemia. Serial serum iron levels can be used as a guide to detect early marrow suppression by a drug which is regarded as a potential marrow toxin.

After the diagnosis has been established, one is faced with treating a patient who presents a disease associated with a very poor prognosis. Component blood therapy (red cells, white cells and platelets), steroids, hematemics, androgens, splenectomy and bone marrow transplantation have been used with variable success. The most notable addition to the armamentarium in the past seven years has been oxymetholone, a semisynthetic anabolic steroid. This drug was first reported to be effective in aplastic anemia by Sanchez-Medal in 1964. Over the ensuing years, a remission rate of 47% with oxymetholone has been reported. The doses required to achieve these remissions

have generally been three to four times the usual recommended dose. Although reported side effects are minimal, the usual caution must be exercised as in all experimental trials.

A convenient method of predicting response to therapy has been emphasized by Bloom and Diamond who measured the quantity of hemoglobin F (fetal hemoglobin) in the blood of children with aplastic anemia. In all of their patients who survived, the hemoglobin F level was > 400 mg%, and returned to normal after recovery.

There is one other aspect of aplastic anemia that should be considered, and this is the relationship of acute leukemia to aplastic anemia. A number of case reports documenting the development of acute leukemia following aplastic anemia have appeared in the literature. Dameshek noted this problem in 1967, and suggested that marrow toxins might be leukemogenic either by damaging the chromosomal structure of the stem cell, leading to multiplication of abnormal cells, or by damaging the marrow and allowing a "clone" of leukemia cells to proliferate. Although these speculations require further development, they do raise the spectre of the dire consequences which follow serious insults to the bone marrow.

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(Continued from p. 24)

physician manpower pool of the Nation. I call your attention to Section 2, Paragraphs G and H and to Section 5. Section 5 is a new inclusion of great importance.

The language in Section 2 should overcome prior objections (H. R. 1) as stated by the AMA and the AAMC. We visualize the development of both medical and post graduate medical schools keyed to affiliations. Ultimately I would like to see 4 or 5 such Uniformed Services Universities of the Health Sciences. With public clamor for more action and less rhetoric in all health arenas I believe H. R. 2 enjoys a strategic

position this year. I urge you to join with me in an effort to hasten its birth.

I would be remiss not to mention S-853 introduced by Senator Goldwater, which is a companion piece of H. R. 2 with one exception. That is, Senator Goldwater's Bill provides for the establishment of pre-medical courses at each of the Military Academies. This would be a delight to see and would follow probably rather closely, the Air Force Academy model of a Life Sciences Division which now adequately prepares Air Force cadets for entry direct to medical school without deficiencies. ☘

EXTRA-THORACIC ASSISTED BREATHING AND CIRCULATION (ETABC)***:

EIGHT YEAR FOLLOW-UP REPORT

By CAPT Joseph L. Whatley, MC, USN, (Ret), FACS*,
and Irving Rehman, PhD**

A preliminary report on the use of an extra-thoracic assisted breathing mechanical ventilator was presented by the authors in the October 1966 issue of U.S. Navy Medical News Letter.¹ Since that time, research on its use has continued at the University of Tennessee

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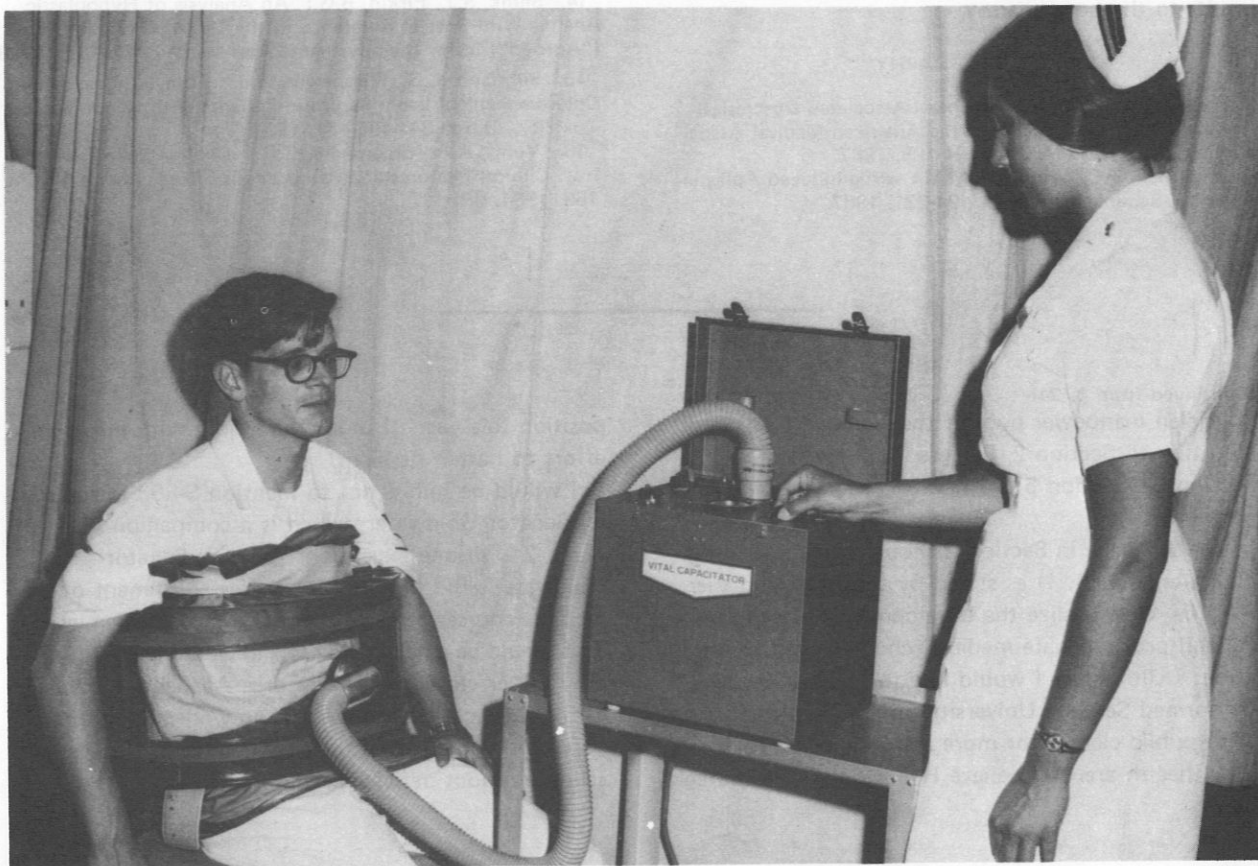
**University of Southern California School of Medicine and Consultant Naval Hospitals Oakland, San Diego and Camp Pendleton.

***("Vital Capacitator," Hemo-Dyne Corporation, Santa Ana, California).

The opinions or assertions contained herein are those of the authors and are not to be construed as official or reflecting the views of the Navy Department or the Naval service at large.

Medical School and the following Naval Hospitals: Oakland, San Diego, Camp Pendleton and Memphis. The clinical use of this mechanical ventilator was the subject of a Master's Thesis prepared by a graduate student at USC's Physical Therapy Department.²

Various types of mechanical ventilators have been used for a number of years. They may be classified into two broad categories — (1) Negative pressure ventilators (externally applied) or (2) Positive pressure ventilators where air and/or oxygen forcefully inflates the lungs through the tracheobronchial tree. Positive pressure ventilators may further be broadly classified as (a) time cycled, (b) volume cycled, or (c) pressure cycled. One can readily see that *negative pressure*



Vital Capacitator (ETABC) in use. Velcro straps seal the cuirass to the chest wall and upper abdomen.

ventilators provide a more physiological mechanism, since their use merely enhances the normal physiological mechanism of breathing. Normal ventilation results from the negative pressure generated in the chest cavity by the action of the ventilatory muscles. Positive pressure ventilators produce an iatrogenic type of respiration — i.e., directly opposite to the normal respiratory rhythm.

There is no "best" mechanical ventilator, as evidenced by the number of different types and models on the market today. Indeed, none of them can safely and predictably replace normal breathing. But these ventilators have served their purpose, since even "second best" benefits a patient in ventilatory failure, whose alternative is a respiratory death.

The use of the body tank respirator, ("iron lung") was first described in 1929, and it was used extensively during many polio epidemics. It had the advantages of durability and relative ease of operation. Its disadvantages were its size, cumbersomeness, and operational noise. Patient care by physicians and nurses was rendered awkward and difficult. Administration of intravenous solutions and other medications, and the monitoring of physiologic functions proved almost insurmountable. Since the tank type respirator encased the whole body except for the head, negative pressure was applied to the abdominal contents and extremities as well as to the thorax. This led to pooling of blood in the large vascular abdominal reservoirs and in the extremities. Consequent decrease in venous return and cardiac output resulted in the well-known "tank shock". In order to obviate "tank shock", a semirigid cuirass type ventilator was developed which embraced only the thorax, but its disadvantages included an inability to obtain a seal sufficiently tight for effective application of the desired negative pressure in different anatomical types.

For the foregoing reasons, the use of various types of intermittent positive pressure ventilation devices (IPPV) came into vogue. Each of these IPPV devices exploits some facet of physiology that lends itself to manipulation by a mechanical principle, or exploits some mechanical principle that regulates ventilatory physiology. However, each of these IPPV devices produces a paradoxical, iatrogenic effect on ventilation opposite from the normal physiological mechanisms.

Some of these devices are quite sophisticated mechanically, but many require frequent complicated cleaning and recalibrating, and extensive training of physicians and technicians in their proper use to avoid injury to patient respiratory and cardiovascular systems. The dangers of cross infection from one patient to another using IPPV are well known, since these



The compact, light weight power unit may easily be transported and used wherever any ordinary light plug is located.

devices are notably difficult to sterilize.

The dangers of IPPV have been well documented and include the following: systemic hypotension due to impaired cardiac venous return, increased central venous pressure, and a reduction in urinary output. In some patients with severe airway obstruction, adequate ventilatory volumes requiring high respiratory pressures can be generated at the expense of a temporary reduction in venous return and cardiac output. The final respirator pressure will represent a compromise between circulatory and ventilatory needs at the given moment. A critical reduction in cerebral blood flow as well as a shift in the oxyhemoglobin dissociation curve to the left may lead to neurologic dysfunction, circulatory collapse and occasionally death. Prolonged artificial ventilation has been associated with deteriorating pulmonary function and characteristic pathological abnormalities.

Anderson,³ states that artificial ventilation tends to depress cardiac output and its routine prophylactic use is therefore undesirable. This is especially notable in patients who have undergone mitral valve surgery,

or who present pulmonary hypertension and right ventricular failure. A rather sharp drop in cardiac output is observed with the change from spontaneous ventilation to artificial ventilation. No appreciable difference in cardiac output was demonstrated between intermittent positive pressure controlled ventilation and assisted ventilation at the same pressure. Return to spontaneous ventilation resulted in a sharp increase in cardiac output. "During the expiratory phase, pulmonary artery pressure was essentially the same with the various types of mechanical ventilation as with spontaneous ventilation; however, a marked increase in pulmonary artery pressure occurred during the inspiratory phase with all types of mechanical ventilation. . ." The fall in peripheral arterial pressure was roughly proportional to the decrease in cardiac output produced by the various types of mechanical ventilation, according to Anderson.

"During spontaneous inspiration, negative pressure within the thorax tends to suck blood into the central venous system — a mechanism largely defeated by positive intratracheal pressure during the inspiratory phase," Anderson notes. "The depression of cardiac output appears due primarily to increased pulmonary

vascular resistance resulting from compression of pulmonary capillaries by positive inspiratory pressure plus the effect of lung expansion, which has been shown to increase pulmonary vascular resistance." Anderson states that intratracheal pressures as low as 5 mm. Hg will impair pulmonary capillary circulation and compromise the right ventricle.

Other dangers of IPPV have been repeatedly reported in the literature, and were recently listed by Dr. John T. Sharp, Chief of Cardiopulmonary Laboratory at the Hines VA Hospital as follows: "Blood pressure and cardiac output effects of positive pressure; local damage to lungs by pressure and high oxygen concentrations; induced alterations in ventilation-perfusion distribution; electrolyte and acid-base problems; cerebral vasoconstriction, and; infection of lower airway and lungs." Getzen⁴ has reviewed a series of autopsies performed on cases treated by prolonged IPPV with its inherent dangers.

No attempt will be made here to compare the effects of "ETABC" with those of the more commonly employed "IPPV", since it is the authors' contention that they represent two entirely different modalities — one that enhances the normal physiological mechanism

Fig. 1

	PHASE OF CYCLE	INTRA-THORACIC PRESSURE	RIGHT VENT. FILLING AND STROKE VOLUME	RIGHT VENT. CARDIAC OUTPUT	TOTAL THORACIC BLOOD VOLUME	LEFT VENT. FILLING AND STROKE VOLUME	LEFT VENT. CARDIAC OUTPUT
IPPB (IATROGENIC) *	INSPIRATION	↑ NOT TO EXCEED +10 -15 cm H ₂ O	↓ (PERIPHERAL VENOUS PRESSURE ↑)	↓	↓	↑ (FOR A FEW BEATS ONLY (3-5) THEN ↓)	↑ (BUT NEG. IF IPPB PHASE PROLONGED)
	EXPIRATION	↓ TO ATMOSP. PRESSURE	↑ WHEN COMPARED TO PREVIOUS POS. PRESS. INSP.	↑ (IF EXP. LONG ENOUGH i.e., 5 INSP.)	↑	↓	↓
NORMAL BREATHING	INSPIRATION	↓ (-7 cm H ₂ O) ACTIVE	↑	↑	↑	↓	↓
	EXPIRATION	↑ (-2 cm H ₂ O)	↓ WHEN COMPARED TO NORMAL INSP.	↓	↓	↑ DUE TO VENOUS RETURN FROM LUNG	↑
ETABC **	INSPIRATION	↓ NORMAL RANGE OR ENHANCED	↑	↑ ENHANCED	↑	↓	↓
	EXPIRATION	↑ NORMAL RANGE OR ENHANCED	↓	↓ ENHANCED	↓	↑	↑ ENHANCED

Modified from Sheldon, "Pressure Breathing in Chronic Obstructive Lung Disease".

* Iatrogenic respiration (IPPB or IPPV) is exactly opposite (phase wise) to normal respiration.

** ETABC (Extrathoracic Assisted Breathing and Circulation) produced an enhanced normal physiological mechanism of respiration.

of respiration and circulation (ETABC) and the other, contrariwise, an iatrogenic, opposite mechanism to normal respiration and circulation (IPPV). The only comparison offered here is that which is required to better understand the physiological mechanisms involved in respiration and circulation. (See Fig. 1)

When we first began using the vital capacitor (ETAB) for respiratory problems, we were very pleased with its versatility, ease of application, and ruggedness. One unit has been used continuously for eight years without major mechanical failure. The rate and depth of respiration, both inspiratory and expiratory phases, can be easily preset and controlled throughout its use. The unit operates on ordinary 110V, 60-cycle house current. It is compact and easily carried by one person.

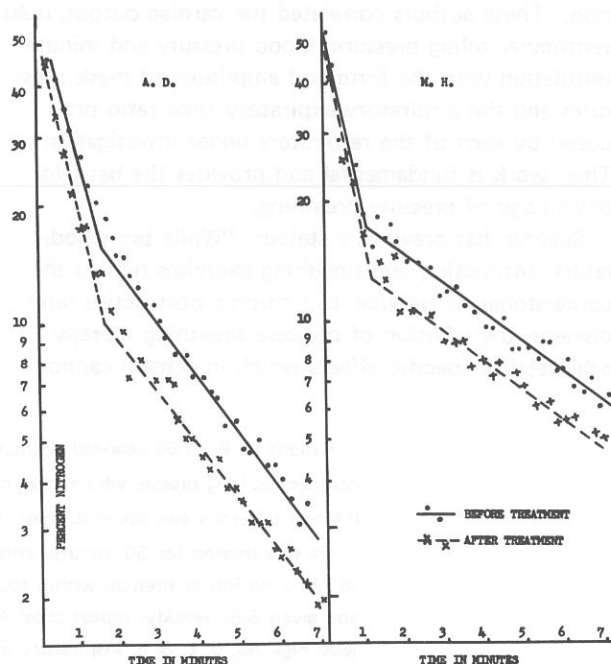
Even more gratifying was the beneficial effect observed not only upon the pulmonary respiratory mechanism, but upon the circulatory mechanism as well. We deduced that ETAB benefited the circulation by enhancing the normal physiology of respiration. These effects were demonstrated by an increase in cardiac output with resultant increase in peripheral and cerebral circulation. A controlled type of cardiopulmonary resuscitation, similar to closed chest external cardiac massage, is provided. Accordingly the designation was modified to "ETABC," (Extra-Thoracic Assisted Breathing and Circulation).

The authors⁵ studied movements of the diaphragm in over 50 normal, emphysematous and asthmatic individuals by means of cinefluorography, using both ETABC and IPPV. We noted that, even in the normal subjects, the configuration of the diaphragm and heart during IPPV paralleled that of the emphysema patients, whereas with ETABC the normal movements were enhanced. Blood studies performed on these 50 patients and controls while using "ETABC" showed a consistent rise in blood pH, and a drop in blood pCO_2 . These findings stimulated further studies on the dog at San Diego by Getzen, et al.,⁶ who confirmed our findings. ETABC and IPPV were compared using cinefluorography and densitometry, correlated with tidal volume and electrocardiogram studies.

Investigation was also carried out to determine the maximum ventilatory pressures that could be safely applied to experimental animals without producing trauma to the tracheobronchial tree, lungs, and/or diaphragm. Using ETABC, it was found that pressures which increased tidal volumes up to 4.5 times normal produced no trauma or damage to the animal. Using IPPV, pressures above twice the normal ruptured the lungs and diaphragms in some of the experimental animals.

Recognizing the possibility of improved peripheral

Fig. 2



Nitrogen washout data on two patients showing apparent decrease in size of the "slow space" after five weeks treatment with ETAB chest cuirass.

Courtesy of Dr. Reynolds, et al., University of Tennessee Medical School.

and cerebral circulation using ETABC, the authors⁷ employed thermography over the carotid and femoral arteries in volunteers. Using ETABC, a perceptible increase in temperature was demonstrated over the carotid and femoral areas, indicating increased blood flow through these areas. No such increase was noted using IPPV; a small but perceptible drop was obtained, indicating decreased blood flow.

Jackson⁸ has used ETABC in postoperative neurosurgery patients as a method of preventing postoperative pulmonary complications such as "Wet Lung," or pulmonary edema. This modality has been successful in his clinical series of patients.

Reynolds, et al.,⁹ at University of Tennessee Medical School reported on the use of ETABC in chronic obstructive lung disease. In their small series of cases, they found an increase in tidal volumes and nitrogen washouts, and an apparent decrease in the "slow space," following five weeks of treatment with ETABC. Their studies are being continued with additional cases. (See Fig. 2)

Sheldon¹⁰ states: "The new knowledge gained during WW II on the circulatory and respiratory effects of increased pressure in the airways stimulated post-war research and the production of an unwarranted number of IPPB devices."

Cournand, et al.,^{11,12} began an exhaustive and systematic study of the hemodynamic effects of IPPB

and of the available mechanical devices for its production. These authors correlated the cardiac output, right ventricular filling pressure, blood pressure and minute ventilation with the form and amplitude of mask pressures and the inspiratory-expiratory time ratio produced by each of the respirators under investigation. Their work is fundamental and provides the basis for physiology of pressure breathing.

Sheldon has previously stated: "While bronchodilators, antibiotics, and breathing exercises remain the cornerstones of treatment in chronic obstructive lung diseases, the addition of pressure breathing therapy achieves five specific effects which in general cannot

be obtained as readily by other means: (a) Improved alveolar ventilation, (b) Improved bronchodilation, (c) Improved air distribution, (d) Direct reduction in airway resistance, (e) Reduction in the work of breathing." ETABC likewise accomplishes all these objectives with ease, and with a safety factor not found in IPPV. In addition, using ETABC, the dangers of decreasing cardiac output are obviated — in fact the use of ETABC *enhances* the cardiac output, as well as the peripheral and cerebral circulation.

Cook, et al.,^{13,14} recently reported to the San Diego County Surgical Society on "The Comparative Circulatory Effects of Extrathoracic Assisted and Intermittent

Patient H. B., a 56-year-old fireman, presented symptoms of moderately severe obstructive lung disease which caused him to stop working. (See Figs. 3a and 3b, PA and Lateral views taken 23 Feb. 1968.)

He was treated for 30 minutes with ETABC, five times per week, and returned to full time job as fireman within four months. After 14 months of ETABC therapy given 3-5x weekly, repeat chest X-ray studies were obtained on 28 April 1969. (See Figs. 4a, b, c, & d, inspiratory and expiratory PA and right and left lateral views taken 28 April 1969.) Although the patient still presented symptoms of obstructive lung disease, he had decidedly increased exercise tolerance.

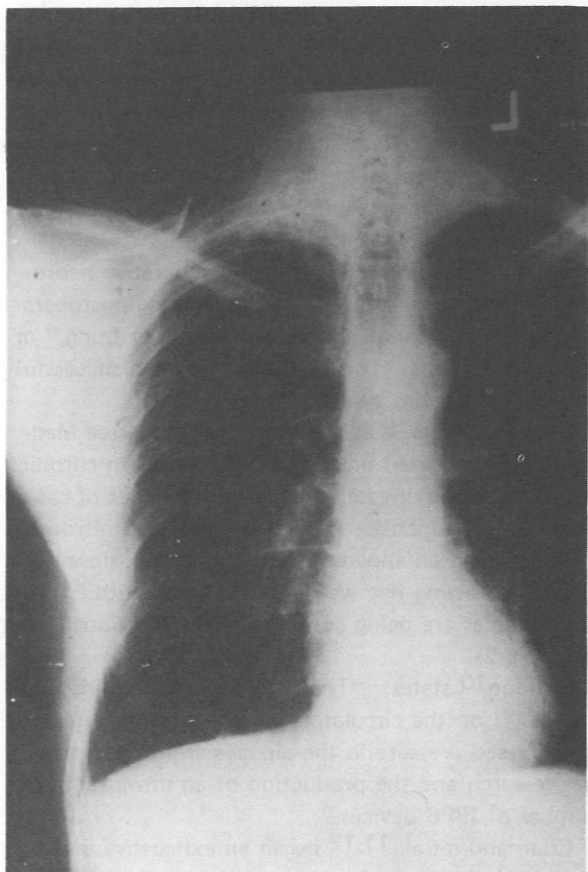


Fig. 3a



Fig. 3b

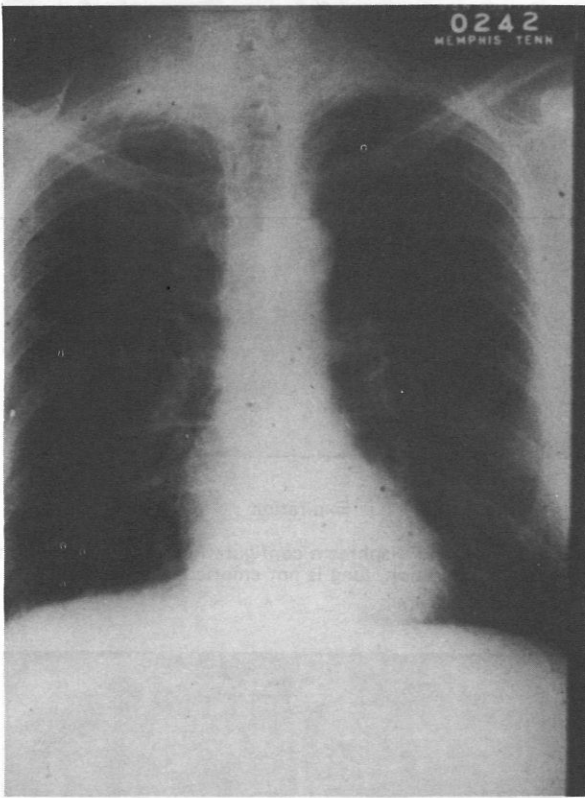


Fig. 4a

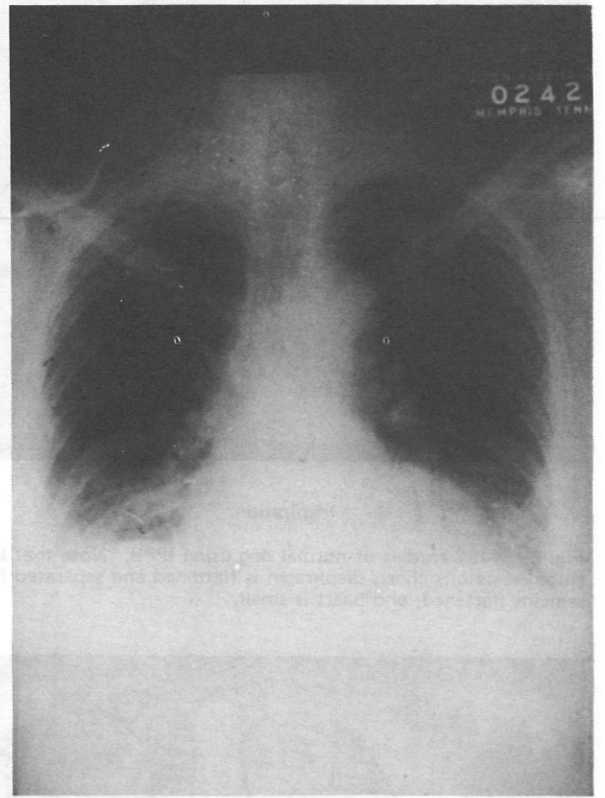


Fig. 4b



Fig. 4c

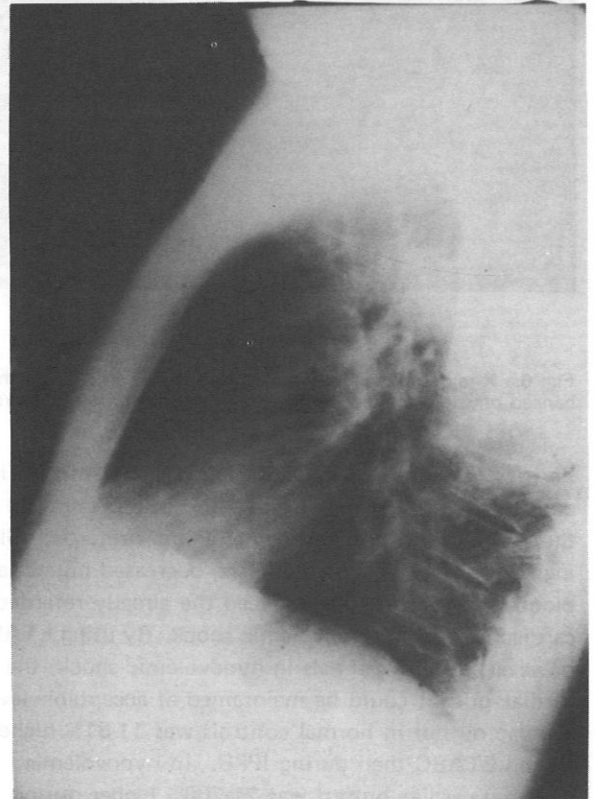
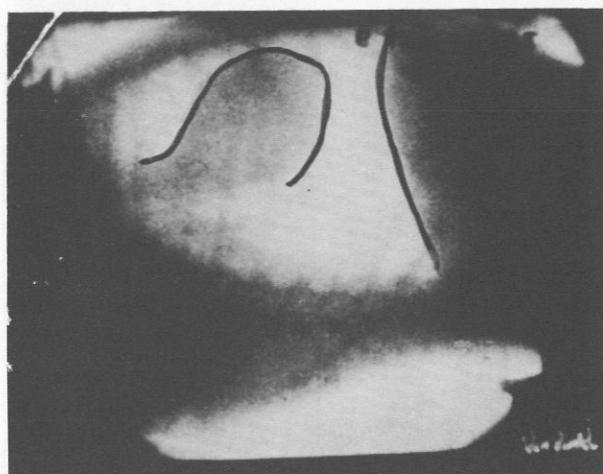
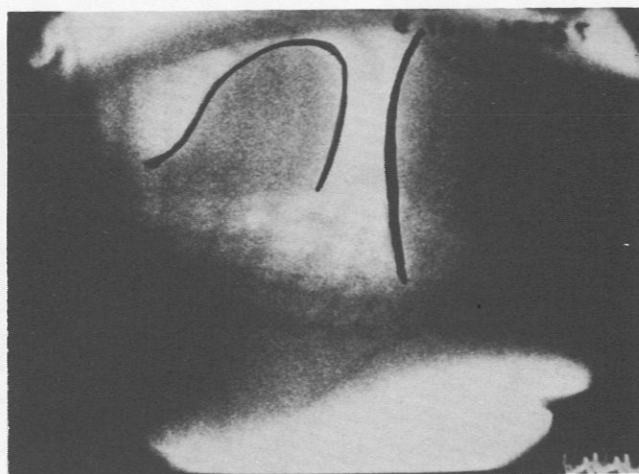


Fig. 4d



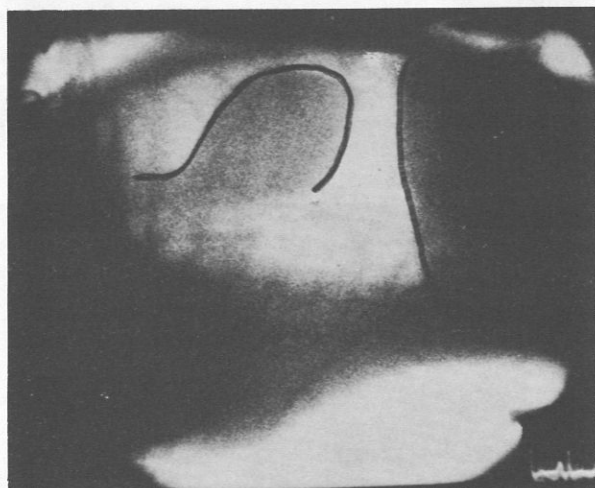
Inspiration



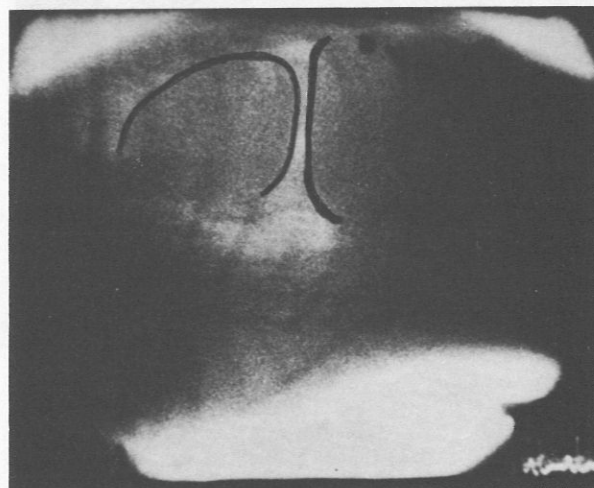
IPPB

Expiration

Fig. 5. X-ray studies of normal dog using IPPB. Note that this normal dog's heart and diaphragm configuration assume that of an emphysematous chest; diaphragm is flattened and separated from the heart. On expiration, lung is not emptied, the diaphragm remains flattened, and heart is small.



Inspiration



ETABC

Expiration

Fig. 6. X-ray studies of normal dog using ETABC. Note that during ETABC the heart and diaphragm assume a normal, but enhanced physiological appearance both on inspiration and expiration.

Positive Pressure Breathing During Hypovolemia." They concluded that the positive intrathoracic pressure in the use of IPPB in experimental animals retarded filling of the right side of the heart, decreased pulmonary blood flow, and further reduced the already retarded cardiac output in hypovolemic shock. By using ETABC, however, even in animals in hypovolemic shock, the cardiac output could be maintained at acceptable levels. Cardiac output in normal controls was 11-51% higher during ETABC than during IPPB. In hypovolemic dogs the cardiac output was 21-200% higher during ETABC than during IPPB.

Summary

Eight years of combined research on the use of an externally applied, cuirass type respirator, the Vital Capacitator, is herewith reported. It has long been recognized that an externally applied respirator produces a more physiological response than does Intermittent Positive Pressure Ventilation (IPPV). The Vital Capacitator, designated ETABC, obviates the disadvantages of both IPPV, and also those of the earlier total body respirators. The "Vital Capacitator" (ETABC) enhances

(Continued on p. 37)

SUMMARY OF TUBERCULOSIS SCREENING PROGRAM CONDUCTED AT THE NAVAL WEAPONS STATION IN 1969

*By CAPT Edwin M. Leach, MC, USN, Medical Officer Naval Dispensary,
Naval Weapons Station, Yorktown, Va.*

Background

In January of 1969, an active duty Chief Petty Officer presented to the dispensary with a left pleural effusion and strongly positive tuberculin skin test. He was subsequently hospitalized and treated for tuberculous pleural effusion with good response.

In March of 1969, a civilian employee of the base fire department was hospitalized by his private physician with advanced pulmonary tuberculosis. Contact studies were begun on his 42 fellow employees in the fire department.

In June of 1969, the Mobile Chest X-Ray Unit made its annual visit to this facility. One thousand two hundred and sixty-five employees voluntarily reported for 70 mm chest X-ray studies. This represented about 37% of our work force at this facility. Of this number, three were found to have positive chest X-rays and were hospitalized. Two were subsequently confirmed by sputum culture as active cases of pulmonary tuberculosis. The third had a right upper lobe cystic lesion and a positive intermediate PPD skin test, but negative cultures. He is still being followed by the Health Department.

Virginia is annually ranked as one of the states with the highest morbidity from tuberculosis. York County has one of the highest per capita attack rates in Virginia.

For these reasons, an exhaustive screening program for tuberculosis was planned at this facility.

Methods

We were informed by the Civil Service Commission that skin tests and chest X-rays could not be made mandatory. The program had to be voluntary. It was decided therefore, to publicize the program widely and to make testing facilities as convenient as possible to all employees. Posters and leaflets were obtained from the State Health Department and distributed to all employees in advance. A letter from the Commanding Officer was distributed to all departments explaining the problem at this facility and the need for compliance by 100% of the work force.

We obtained the cooperation and invaluable technical assistance of the Preventive Medicine Unit No. 2 at Norfolk in performing the skin tests. They sent a team of four individuals under the direction of CDR Ralph Comer, MC, USN. In conjunction with ten corpsmen from this facility, mobile skin testing units were set up at 19 strategically located areas on the station. These areas had been agreed on beforehand by management and the Medical Department, to allow maximal exposure to employees with minimal interruption of the regular work schedule.

Testing was performed by injection of 5 TU (PPD-S) by the Mantoux technique into the forearm which had been previously cleansed with alcohol and dried with a dry cotton ball. No attempt was made to screen those with a previously positive tuberculin test. Duplicate tests were not performed. The initial testing period was from 22-26 September 1969. Repeat test days for those unable to attend were scheduled at the dispensary for 1 and 31 October 1969.

Tests were read in 48-72 hours by measuring induration on the forearm in mm. All readings were recorded and divided into three groups — (1) no induration, (2) 1-9 mm duration, and (3) 10 mm or more induration. Erythema was ignored. For the purposes of this survey, members of group 3 were considered positive reactors and in need of further study.

All individuals with skin tests showing 10 mm or more induration were encouraged to submit to chest X-ray examinations. To facilitate this procedure cooperation was obtained through individuals at the Virginia State Health Department at Richmond, Va. A mobile unit capable of performing 14" x 17" chest X-rays was obtained and deployed at strategic areas on the station. The chest X-rays were then read by Dr. W. E. Apperson, Director of the Bureau of Tuberculosis Control with the Virginia State Health Department, and detailed reports were submitted to us.

Those with other than a normal chest X-ray report were again screened by a medical officer on the Station. Those with evidence of chronic or inactive disease were dismissed. Those with evidence of

previously unrecognized cardiopulmonary disease of an acute or chronic progressive nature were called to the dispensary for interview and further studies. Where indicated these individuals were then referred to their local physician for appropriate diagnosis and treatment.

Results

Contact studies were begun on the 42 fellow employees of the fire fighter who was discovered to have had active disease. Of that number, four men had an initially positive skin test. Of the 38 who were initially negative, six have subsequently converted to positive. All of the men have been followed at three-month intervals with 14" x 17" chest X-ray studies; none has shown evidence of active disease. In the case of each of the converters, notification was given to their family physician and to their local health department. All have been started on isoniazid prophylaxis.

By November 1969, the full scale skin testing program and two "straggler day" programs had been completed. Six hundred and forty-one of 697 (92%) military and 2,563 of 2,749 (93%) civilian personnel had been tested. Of this number, 317 were found to have a weakly positive skin test reaction (1-9 mm induration), and 157 revealed a significantly positive reaction (over 9 mm induration). A breakdown of the data is included in Table 1.

One hundred and forty-one of the 152 positive reactors had 14" x 17" chest X-ray studies performed by the mobile unit. Ten of the positive reactors had chest films taken at the dispensary, and five had had normal chest X-rays at this facility within the past six months. One individual was unaccounted for. A variety of diseases were discovered on several of the chest X-rays, but none was felt to be suggestive of active pulmonary tuberculosis.

Discussion

Over a six-month period, three active cases of pulmonary tuberculosis, and one case of active extrapulmonary tuberculosis were fortuitously discovered in a relatively closed population of approximately 3,500 individuals. This extrapolates to an attack rate of approximately 120 per 100,000, or four times the national average.

Contact studies were not feasible in the two ordnance workers because of the many locations in which they worked and the transient nature of their fellow employees. In the case of the firemen, however, six of 38 employees at risk (initially negative tuberculin tests) converted to positive within the 12-month period of follow-up (through May 1970).

It was apparent then that a significant problem existed on this station with regard to tuberculosis. Moreover, there were 2,181 employees and military who had not been sufficiently ill to seek medical attention and had not been included in the mobile unit X-ray program. It seemed imperative to screen as many of the remaining personnel as possible.

A canvas which involved 93% of the civilian personnel was less than ideal, but considering the problem of logistics, and the almost superstitious fear of some people for the technique or the implications of skin testing and X-ray, this figure is certainly acceptable. The percentage is less than 100% for military personnel because all those who had been tested within the past six months or who had had a previously positive skin reaction were not included in the current survey. Unfortunately, data on those not tested was not tabulated.

The number of positive reactors was disappointingly small; disappointing, that is, because it casts doubt on the reliability of the skin testing procedure. The testing group was divided into four teams, each headed by one of the members from PMU No. 2. These men have had extensive experience with the procedure.

Table 1. PPD-S Skin Test Results*

Reaction Types	Military — %		Civil Service — %		Total — %	
Total personnel	697		2,749		3,446	
No. Tested	641	91%	2,563	93%	3,204	93%
0 Induration	616	97%	2,114	83%	2,730	84%
1 - 9 mm	24	3%	293	11%	317	10%
more than 9 mm	1	.14%	156	6%	157	5%

*Results of Skin Testing Program at Yorktown Naval Weapons Station, using PPD-S and the Mantoux technique.

However, many of the tests were applied and read by corpsmen less experienced with the procedure. It has been my experience in reviewing the data that great confusion arises among some of the corpsmen with the use of the metric system. Skin test reactions have been reported, for example, as measuring 5 cm, 5 mm, 0.5 mm, and one as 0.05 mm. The reporting of the latter two, at face value, is absurd; the first is suspect. The latter two would be recorded by the uncritical observer as negative; the true reading is unknown. Presumably the recorder had in mind 5 mm or 0.5 cm. Prior instruction regarding the precision of recording should be emphasized in the future.

It was apparent from the outset that baseline skin tests on all employees would have been invaluable. None of those with positive skin tests but no sign of active disease on chest X-ray were begun on isoniazid. Ideally all individuals with 10 mm or greater response to PPD-S

and evidence of pulmonary scarring, and all individuals who had converted from negative to positive skin tests within the past year, should have been encouraged to take INH prophylaxis (recommendation of National Communicable Disease Center, Atlanta, Georgia). At the conclusion of the present study, each individual was given a card with his name, pay number, the date and result of his skin test. We now plan to repeat the skin testing program on a yearly basis, and to require skin testing as an integral part of the pre-employment physical examination. If the skin test was positive the previous year the individual will not be tested again, but will undergo a 14" x 17" chest X-ray study. Those individuals who convert from a previously negative to positive skin test will be X-rayed and encouraged to take isoniazid prophylaxis provided by the Medical Department. Their family physicians and local health departments will be advised of our findings and actions by letter. ☸

(Continued from p. 34)

the cardiopulmonary mechanism in a more physiological manner than other modalities of treatment in vogue today. It provides accurate control of rate and depth of respiration and can increase the tidal volumes as much as 4½ times normal with no untoward effects. Increased cardiac filling and output as well as increased peripheral circulation occurs.

Research in ETABC continues. We are interested in the possible use of ETABC in athletic injuries, (to increase the reabsorption of joint effusions, hematomas, etc. to aid in the healing process). If present studies show, as anticipated, an increase in lymphatic flow during ETABC, then the Vital Capacitator could indeed be classified as versatile, since it would enhance the normal physiological cardiopulmonary mechanism in all its dimensions. Its possible clinical uses would then be limited only by the imagination of the attending physician.

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KOREAN SICK CALL

By LCDR Richard D. Tenney, MC, USN, Department of Medicine,
Fleet Advisory Command, U.S. Navy Advisory Group.*

Resources for medical care in The Republic of Korea are limited, especially for the majority of the Korean Nationals who cannot afford the health services which are available. Hence, many of the Korean Nationals are solely dependent upon "good will" missions conducted by U.S. military personnel. Such an effort is being made by the U.S. Navy Detachment at the tip of The Republic of Korea.

A monthly journey is made to A-Kwang-One Orphanage on Koje-do Island off the coast of The Republic of Korea to care for the orphans and villagers where

no medical facilities are available. This medical project resembles those undertaken in Vietnam and serves a similar purpose: to further the friendly relationships between U.S. personnel and Korean Nationals, and to render whatever assistance we can to medically underprivileged people. One medical officer, one Nurse Corps officer, one dentist, and several interested corpsmen and wives comprise the medical team. A typical team is shown in Figure 1.

Koje-do Island has a population of approximately 100,000, and the only physician on the island is trained in the art of "Chinese medicine" rather than occidental medical practices.

Sick call is conducted at the orphanage and the orphans receive first attention. A very small sampling of the orphans is pictured in Figure 2. Most of the

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The opinions or assertions contained herein are those of the author and are not to be construed as official or necessarily reflecting the views of the Medical Department of the Navy or the naval service at large.

Fig. 1. The author, second row, far left, is seen with a typical group of interested Navy personnel and wives at the Orphanage.



Fig. 2. Several of the orphans are being examined.



Fig. 3. The author is shown examining an indigent Korean National.



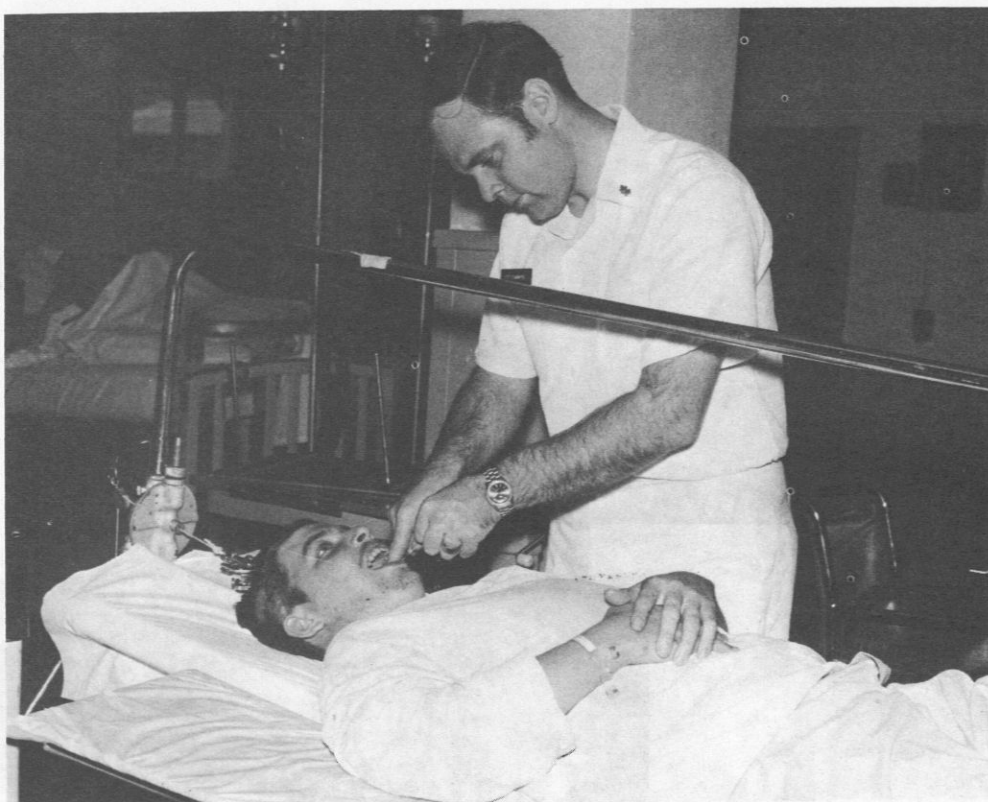
Fig. 4. A typical group of Korean Nationals await examination.

problems presented by the orphans involve cutaneous infections, gastrointestinal disorders secondary to poor nutrition and parasitic infestations, and upper respiratory infections. The treatment which is instituted, particularly antibiotic therapy, usually proves very efficacious since therapeutic agents are otherwise scarcely available to Korean National patients. Resistant bacteria are not encountered to the extent that exists in the U.S. In addition to antibiotics, vitamins, routine upper respiratory infection medicaments and anthelmintics constitute the majority of drugs employed. The more severely ill Korean Nationals are asked to visit the Navy Dispensary for further treatment. This entails a two-hour boat trip to the mainland. An example of a more acutely ill patient referred to the Dispensary is presented in Figure 3.

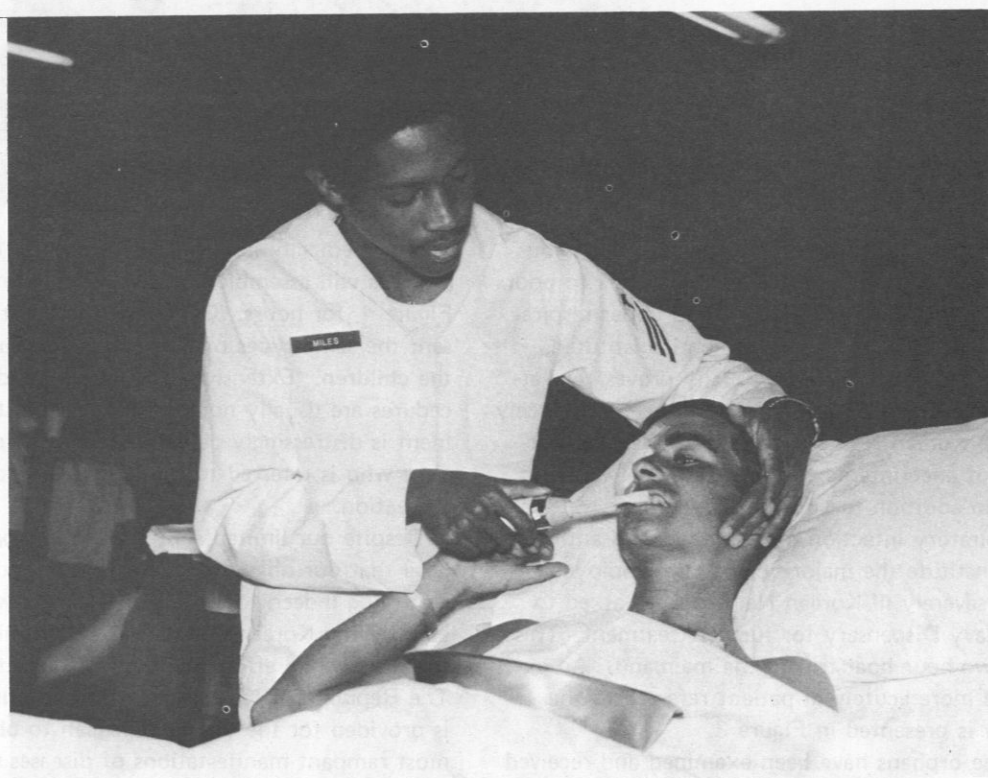
After the orphans have been examined and received the appropriate drugs, the villagers are examined. The

line of medically indigent Koreans never ends. The patients will assemble and await attention, as seen in Figure 4, for hours. Generally, the adult patients present the same types of illnesses as are diagnosed among the children. Extensive drug therapy and surgical procedures are usually not possible and most of the treatment is distressingly palliative. Fortunate is the patient who is referred to the Dispensary for further evaluation.

Despite our limited supplies and equipment, we believe that our objectives are accomplished. It is very gratifying indeed to see our meager knowledge appreciated by the Korean population. Such missions reflect the worthwhile effort made by U.S. military forces in The Republic of Korea. In addition, a unique setting is provided for the young physician to observe the most rampant manifestations of diseases which are seldom seen in routine U.S. medical practice. ☸



LT James W. Fitzsimmons, NC, USN provides dental prophylactic care for patient AO2 Michael V. Sullivan, USN.



HN Craig R. Miles, USNR, assists patient CPL Ronald D. Emory, USMC, with electric toothbrush.

PREVENTIVE DENTISTRY PROGRAM FOR HOSPITAL PATIENTS

The U.S. Naval Dental Clinic in conjunction with the U.S. Naval Hospital, Yokosuka, Japan, has expanded the preventive dentistry program to more fully assist incapacitated patients at the U.S. Naval Hospital, Yokosuka, Japan, in maintaining proper oral hygiene.

The program was designed and implemented for those patients, primarily Vietnam war casualties, who are unable to maintain oral cleanliness. The Preventive Dentistry Department, U.S. Naval Dental Clinic, Yokosuka, Japan, operates the program under the guidance of the periodontist and with the full support of the Commanding Officer, U.S. Naval Hospital, Yokosuka. The following background information provides a brief account of the action taken.

Materials

The materials utilized in the program consist of reciprocating electric toothbrush units with extra tips, dental tape, and a toothpaste containing stannous fluoride. Through the efforts of CAPT J.R. Elliott, DC, USN, the General Electric Company donated the electric toothbrushes and tips for patient use. The remaining items are supplied by the Dental Clinic.

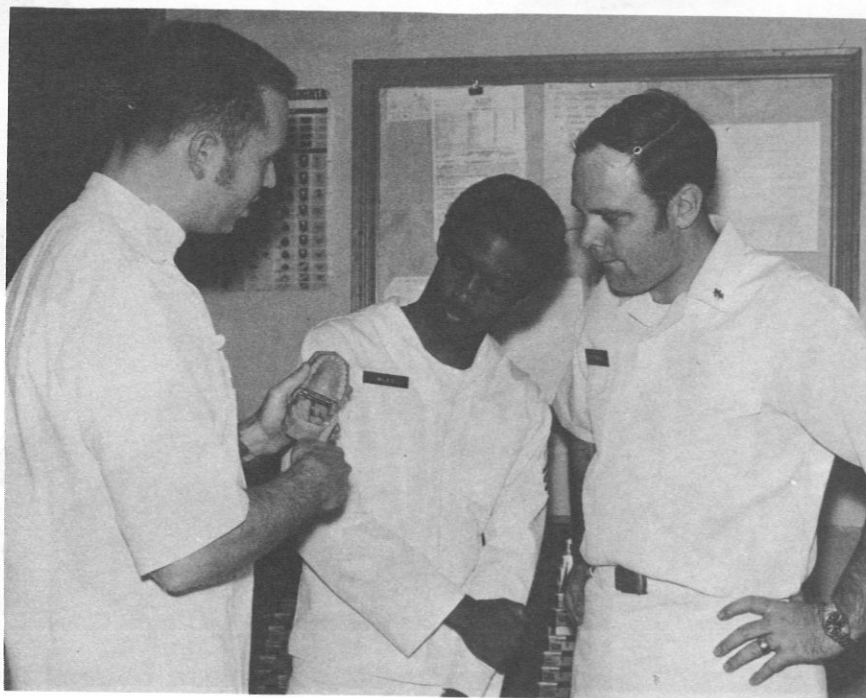
Results

The first meeting was held with all the nurses and

corpsmen to review oral hygiene problems in hospital patients, plaque control procedures and the most effective way to administer a prophylaxis program. A discussion session was included. In addition, smaller group meetings of nurses and corpsmen were conducted on the hospital wards where a dental officer demonstrated the use of the electric brush and dental tape, and answered any additional questions.

A command policy was established whereby a nurse or corpsman shall provide daily plaque control procedures for those patients unable to do so themselves. Patients who are only partially incapacitated are encouraged to use an electric toothbrush. Two rechargeable electric handles and charging units have been distributed to each ward. Each patient included in the program is given his own tip which he may keep or discard after leaving the hospital.

The interest and response of the nurses and corpsmen in this program has been outstanding. Their knowledge of proper oral hygiene and their own oral health habits have undoubtedly improved, and the rapport developed among members of the various medical services involved has been gratifying to both the Hospital and Dental Clinic staff.—U.S. Naval Dental Clinic, Yokosuka, Japan; CAPT Thomas H. Mayo, DC, USN, CO.



LT Ronald Bennett, DC, USNR (left) reviews dental prophylaxis technique with HN Craig Randolph Miles, USNR (center) and LT James William Fitzsimmons, NC, USN (right).

OPERATION ABOUT FACE

Joint U.S. Public Affairs Office

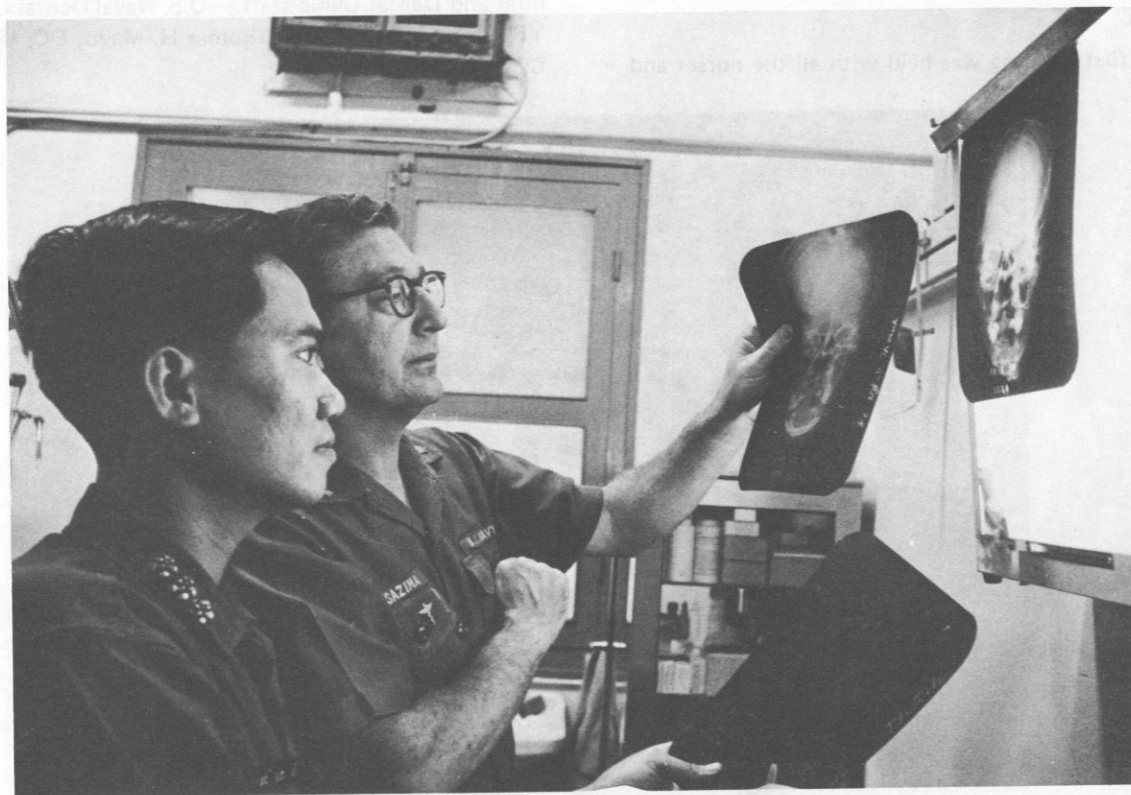
Since Le Van Duyet first welcomed visitors to Saigon Port, travelers have observed that Vietnamese are among the beautiful people. There are exceptions, as can be expected in a nation experiencing three decades of war and ten decades of medical neglect. But today, Vietnamization — a word usually associated with redeployment of military forces and turnover of war materiel — is coming to the aid of the disfigured Vietnamese.

With Vietnamese dentists and surgeons for the first time learning advanced techniques of prosthetic facial restoration, there is a ray of hope for the thousands of servicemen, veterans and civilians who suffer from mangled jaws or faces distorted by disease, war or accident.

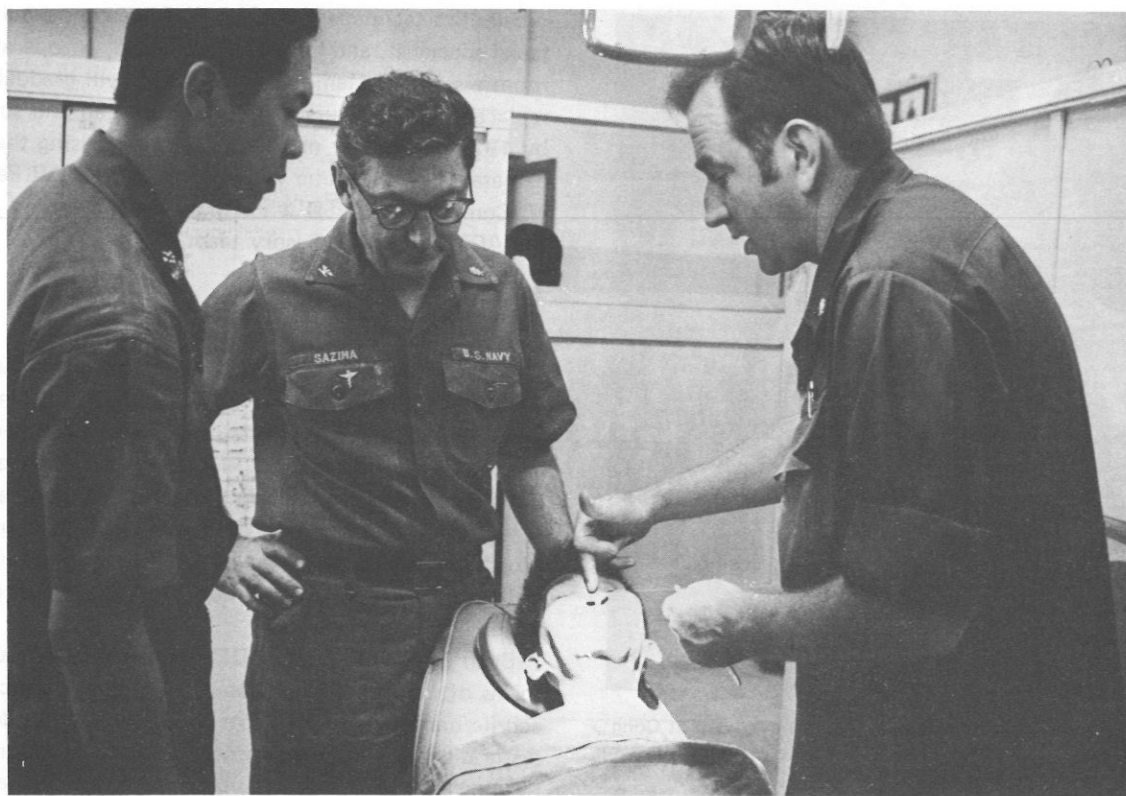
A minor advisory project instituted in July 1970 as part of the Vietnamization effort has made such headway that it is being expanded into a major two-year training program. Originally intended to familiarize the Vietnamese Navy's four dentists with maxillofacial prosthetics, it is now accepting all dentists in the Republic of Vietnam Armed Forces (RVNAF) and the

students at the University of Saigon Dental School. There are 118 full-time military dentists and about 200 dental students enrolled during any one term, and it is hoped that most of them will have opportunities to work with the training team. Dentists and plastic surgeons at facilities operated by the Ministries of Health and Veterans Affairs also are being drawn into the program, which is scheduled to run through the summer of 1972. By that time at least 25 Vietnamese oral surgeons should be qualified to teach prosthodontal skills. Each such practicing teacher should be supported by about three Vietnamese technicians, some of whom will also be qualified to teach.

Training the Vietnamese to aid their scarred countrymen is a team of three dentists, a male nurse and three dental technicians from the U.S. Navy. Their job is not to treat patients directly, but to advise and train Vietnamese practitioners in methods of oral surgery which can be applied in the treatment of these patients. Part of the U.S. Navy's Operation ACTOV



Dr. Do Duc Vi, (left), dental surgeon at Cong Hoa Military Hospital in Saigon, prepares for surgery by studying X-ray films with CAPT H.J. Sazima, former head of the U.S. Navy team instructing Vietnamese dentists in prosthetic facial restoration.



MAJ Lam Ngoc Chau (left), dental surgeon at Cong Hoa Hospital, confers with CAPT Henry J. Sazima, DC, USN (center) and CDR Peter W. Connole, DC, USN, head of the U.S. Navy dental advisory team. The patient's lower jaw was fractured 21 months previously during Viet Cong shelling.

(Accelerated Turnover to the Vietnamese), the team's mission is to demonstrate accepted, nonexperimental techniques not previously taught in Vietnam, then assist Vietnamese professional personnel until they can use the techniques effectively. "We call the program About Face," commented CAPT Henry J. Sazima, DC, USN, who led the first of two teams organized to carry out the program. "We want to work ourselves out of a job."

Patients Treated

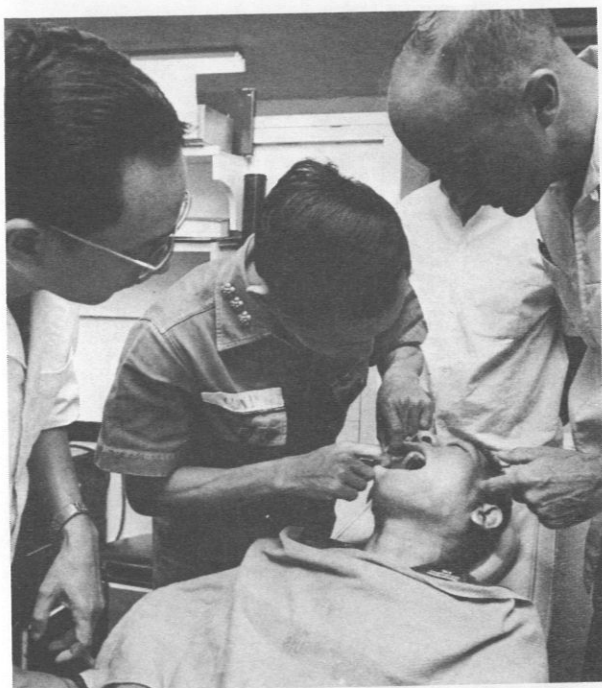
Since July 23, members of the U.S. team have consulted with local practitioners on nearly 2,000 cases and helped plan treatment for about 100 patients each month. At the various hospitals where team members instruct, patients are being discharged with faces restored by major surgery at a rate of about one a day. Approximately 50% of the patients benefiting from the new techniques have been military and 50% have been civilian, including military dependents.

The program is helping the Vietnamese to treat a large backlog of cases. CAPT Sazima remarked: "No

RVNAF dental officer had been formally trained previously in oral surgery, prosthetics or maxillofacial prosthodontics. Victims of accidents, combat trauma or disease were left with disfiguring scars covering areas deficient in facial bone or jaw structure. Unless treated by a maxillofacial team, such patients can become wards of society, unable to eat properly or speak clearly. Severe cases in a number of countries have chosen suicide in preference to remaining social outcasts."

Dr. Sazima, a veteran of 17 years in the profession, was impressed with the capabilities of his Vietnamese colleagues, both military and civilian. "Now they are doing things here that they wouldn't have attempted ten weeks ago," he stated. "More important, they are doing them well and they are gaining confidence in their abilities."

CAPT Sazima offered instruction primarily in oral surgery while CDR Dorsey J. Moore, DC, USN, and CDR William J. Scott, DC, USN, advise on prosthetics. A male nurse, LT(j.g.) Michael L. Feris, supervises the operating room. Dental Technicians First Class who work behind the scenes are Ronald C. Henricks, a



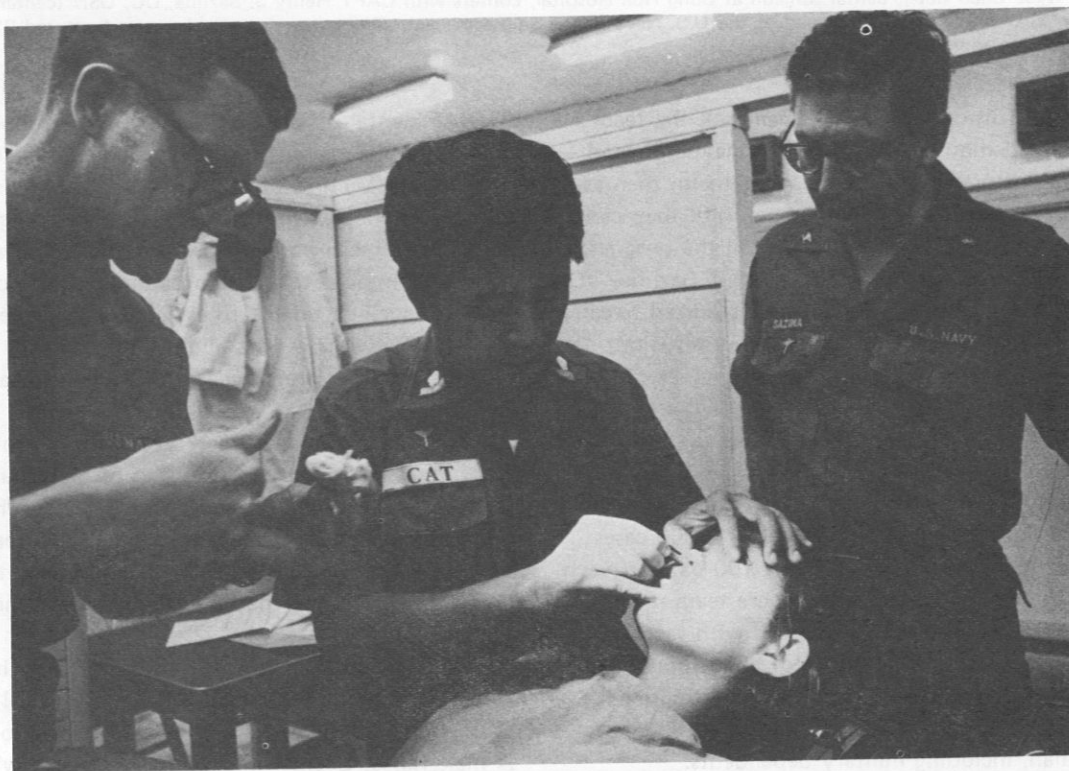
Chief Surgeon on the denture and artificial eye ward at Cong Hoa Hospital, CAPT Vuong Huu Cap (center), fits dentures for a patient. Assisting him are Dr. Tu Hung Binh, a dental surgeon (left), and CDR William J. Scott of the U.S. Navy dental advisory team.

prosthetics technician; Charles R. Anderson, a maxillo-facial specialist, and Charles D. England, an operating room assistant. Members of the team will gradually be replaced as their tours of duty come to an end so that by 1972 an entirely new team will be advising the Vietnamese. CAPT Sazima was succeeded by CDR Peter W. Connole, DC, USN who is now in Saigon and heads the ACTOVDENT advisory team.

Dramatic Results

Some of the operative results have been dramatic. Recently a 23-year-old man who had been unable to open his mouth for 20 years underwent corrective surgery at Cong Hoa Hospital. His jaw was solidly ankylosed by persistent childhood infection. During a two-hour operative procedure, the jaw was replaced by prosthetic devices prepared by CDR Moore, who specializes in prosthetic fabrication of tissues, teeth or bone.

Both CDR Moore and CDR Scott utilize various forms of metal, silicone rubber, Vitallium, plastic or acrylic materials. CDR Scott primarily teaches dental restoration and intra-oral procedures. CDR Moore is training Vietnamese in intra-oral and extra-oral restoration involving the facial area from the cheekbone to

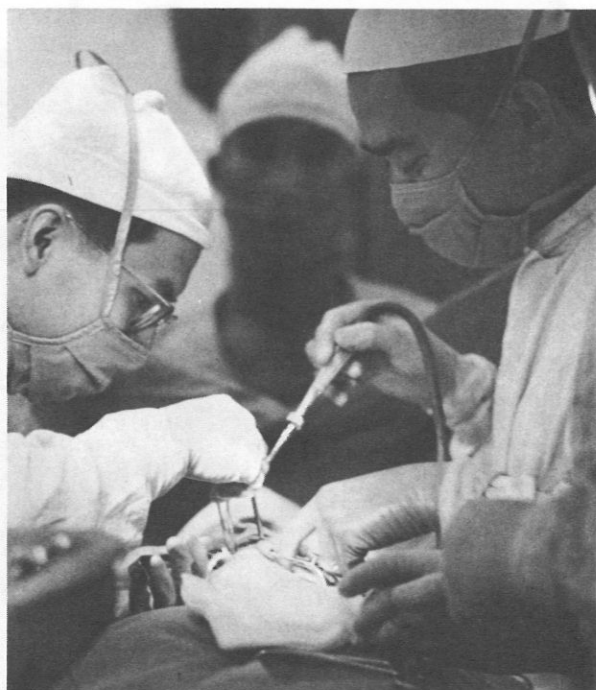


Dr. Nguyen Dang Cat, Chief of plastic surgery at Cong Hoa Hospital, treats a young woman for residual scars from an auto accident seven years ago. Consultants are: CDR Dorsey J. Moore (left) and CAPT Henry J. Sazima (right) of the U.S. Navy Dental Corps.

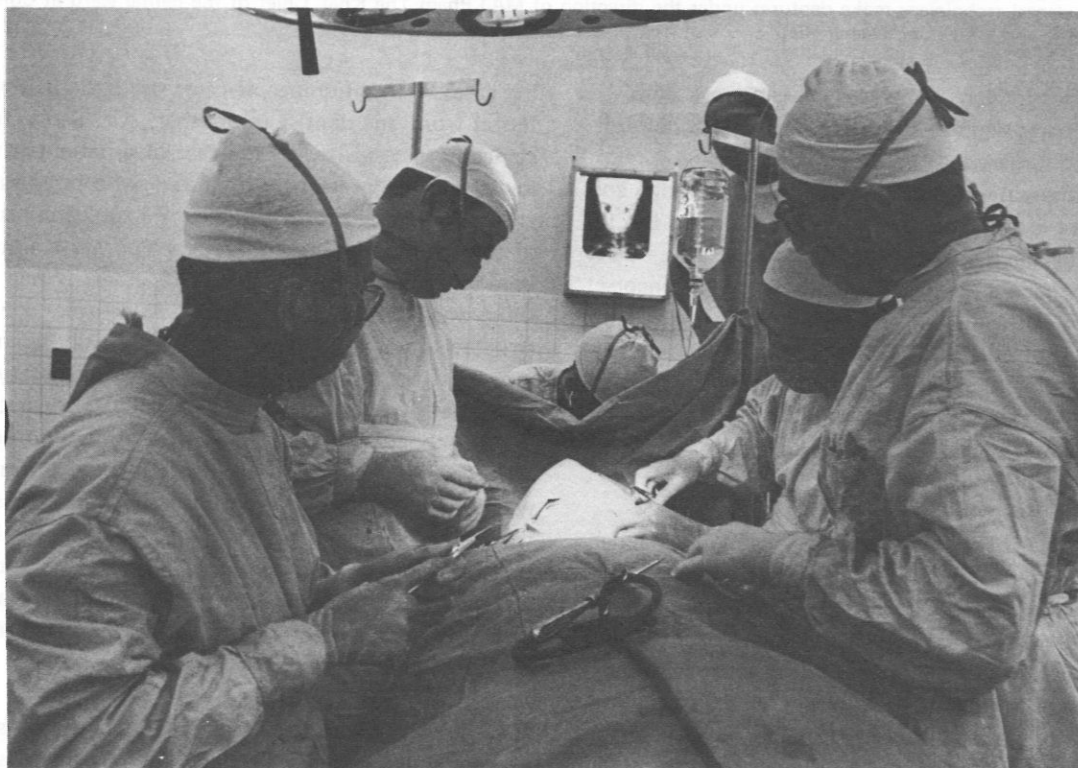
the mandible, and from ear to ear. CDR Moore has trained Vietnamese technicians to produce artificial eyes, noses and ears, even an esophagus and the entire side of a man's face.

"Once trained to use the available materials," said Dr. Moore, "it isn't a big step to move from inside the mouth to outside. We aren't doing anything new by U.S. standards, just introducing the Vietnamese to techniques and materials which are available. There is a great need for these services. It is estimated that there are 20,000 veterans in need of artificial eyes alone. And the eyes created by the Vietnamese technicians are excellent by U.S. standards."

The advisory team introduced the use of silicone to Vietnam. An inexpensive rubber, it can be stored under refrigeration for a year before use. In the U.S. it has been used successfully for making such replacement parts as noses and ears. Previously the head of the Maxillofacial Prosthetics Division at the Naval Dental School, Bethesda, Md., CDR Moore teaches the use of silicone at the Nguyen Van Hoc Teaching Hospital in Saigon, which is run by the Health and Education Ministries. One of the outstanding students there is Dr. Nguyen Dieu Lien Huong, an attractive young dentist. Before the team's arrival she practiced general dentistry at the outpatient clinic, but is now specializing



Dr. Do Duc Vi (left) and Dr. Nguyen Minh Truong aspirate from a patient's mouth during surgery to implant a prosthetic jaw made of Vitallium at Cong Hoa Hospital.



Dr. Do Duc Vi of Cong Hoa Hospital (second from the right) repairs a fractured mandible sustained in combat from a gunshot wound. Assisting him (from left to right) are: Dr. Nguyen Minh Truong who will soon undertake a two-year surgical residency at the University of Minnesota teaching hospital; CDR Peter W. Connole, DC, USN, and; CAPT Henry J. Sazima, DC, USN (at far right).



Vietnamese dental technicians make dentures under the direction of MAJ Pham The Khai, Chief of the dental ward at Cong Hoa Hospital (left), and LT Duong Quang Hien.

in prosthetics. "Here," she says, "I can work with prosthetic parts which I think are more often helpful than plastic surgery."

One of the patients being treated by Dr. Huong and CDR Moore is a veteran of Dien Bien Phu who lost his nose, his right eye and the adjoining cheek area. CDR Moore has made a silastic nose and eye socket incorporating an artificial eye. This is worn by the patient with the aid of an adhesive. Dr. Huong is learning to make replacement parts for this veteran who will require new ones about every six months.

New Procedure

The chrome-cobalt technique for making partial dentures was also introduced. "It is lighter and better wearing," commented CDR Scott. The hospital ship USS Sanctuary used to make the team's denture frameworks from wax models of the impressions made by CDR Scott at Cong Hoa. "Now the Vietnamese have the capability to make these themselves," he reported.

CDR Scott explained that "the only patients we work on personally are those we wish to use as teach-

ing cases." In a number of cases the patient is referred from one dentist to another. Dr. Scott, for instance, was consulted in the case of a patient whose lower jaw was previously fractured, who presented with an absent segment of mandible. He took impressions of the teeth and gums to size a temporary splint which immobilized and fixed the jaws together. When everything was in place, CAPT Sazima took over. He constructed a new lower jaw, utilizing the jelly-like marrow from the patient's hip crest. During surgery, the bone marrow was placed in a specially fabricated chrome-cobalt mesh crib lined with a microporous filter. The filter allowed vital fluids to flow through, but was thick enough to prevent skin and muscle tissue from entering. The mesh crib was attached to the intact mandible by small chrome-cobalt screws and the wound was closed. After six weeks the jelly mass had generated new bone joining together the fracture ends of the mandible.

"This new procedure which Vietnamese oral surgeons are now learning," stated CAPT Sazima, "is better than a regular bone graft in many cases because the healing process is faster, less painful and more complete."

Visit Hospitals

Besides Nguyen Van Hoc, team members visit the Bach Dang naval hospital in Saigon, the reconstructive surgical center run by the Children's Medical Relief International, and the Saigon University Dental School. But most of their work is performed at the large Cong Hoa military hospital in Saigon, which has 1,800 beds for more than 3,700 patients.

Before the team's arrival there was no full-time advisory program at Cong Hoa and the dental clinic consisted of three rooms deemed inadequate for the demands of modern dentistry. As a result of the combined efforts of Vietnamese and American dentists, a "showplace" clinic has been opened at Cong Hoa that includes 13 examination rooms, two maxillofacial operating rooms, a central sterilizing room, a 90-kilovolt X-ray machine and a 25-bed dental ward. Under Operation ACTOV, much of the equipment came from the dental department of the former NSA hospital in DaNang.

A number of dental students accompany the three American dentists on their rounds of the hospitals, to observe and learn as they consult with Vietnamese dentists. At Cong Hoa, four full-time dental trainees have received six-month military leaves, two to study specialized surgery and two to work in prosthodontics. The eight staff dentists in the maxillofacial clinic consult daily with American team members. At the Nguyen Van Hoc hospital, sessions are usually attended by seven or eight students, while naval trainees and staff dentists observe operations and consultations at Bach Dang. With classes resuming for the new term at Saigon University, more of the team's work will be conducted on campus.

"Teachers in the medical and dental schools at Saigon University are themselves becoming students," said CAPT Sazima. "Our team members are lecturing to instructors at the graduate school level, preparing them to teach some of the material we are making available."

Higher Goals

The training program is making progress not only in introducing modern techniques but in getting the Vietnamese to think on a higher level of skills. "When we arrived," commented CAPT Sazima, "the Vietnamese realized they had a problem but they felt they had no way of solving it. They were frustrated by the backlog of cases and the complete lack of skills to rehabilitate many patients. French policy had been to limit Vietnamese training to basic areas, retaining specialized skills for the French practitioners.

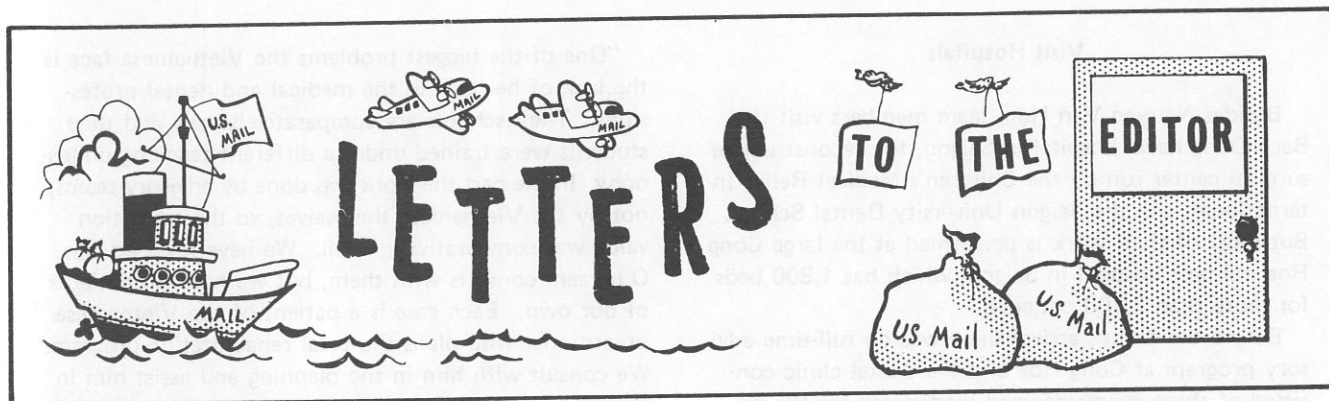
"One of the biggest problems the Vietnamese face is the lack of heritage in the medical and dental professions. Their schools are comparatively new and their students were trained under a different teaching philosophy. In the past the work was done by advisory teams, not by the Vietnamese themselves, so the education value was comparatively small. We have reversed this. Our team consults with them, but we have no patients of our own. Each case is a patient of the Vietnamese practitioner who plans the total rehabilitation program. We consult with him in the planning and assist him in the treatment. But the Vietnamese practitioner makes the decisions, he writes the orders for all treatment, and he does the work. Now we are seeing a change in the Vietnamese dentists' attitude toward their work. They are planning ahead and scheduling their work. They are taking aggressive action to organize their rehabilitation program now that they can see they will have the necessary skills to handle the problems."

Some of the work being done by the Vietnamese today could not have been contemplated six months ago. Examples of the current sophisticated capabilities include:

- Replacement of a child's nose destroyed by infection, with an artificial nose fabricated in Saigon;
- Reconstruction of the floor of the mouth in a woman who had suffered a gunshot wound;
- Fabrication of skull plates to restore skull defects;
- Artificial eye placements; and
- Bone graft repairs of defective mandibles.

Dr. Truong Nhu San, head of the Nguyen Van Hoc dental service and chief of its four full-time dentists, is enthusiastic about "Operation About Face." The benefits reaped from this program "will remain with us for a long time," she stated. Her oral surgeon, Dr. Dam Bao Kiem, heartily agrees.

At the Ministry of Health, an administrative official who is also a practicing physician made the following comment concerning Operation About Face. "One of the greatest successes has been the amalgamation of academic, civilian and military medical and dental communities into a single effort directed at improving the rehabilitation program. In effect, the U.S. team has acted as a catalyst in this amalgamation. Americans will leave knowledge behind them when they return to the U.S., but even more important, they will leave behind a hard core of practitioners confident that they can handle a problem once considered insoluble — Vietnamese practitioners determined to get this mass rehabilitation job done well." ☸



To the Editor: The cleaning of impression trays has been a continuing problem for the prosthetic dental officer. Trays have been cleaned by many methods including soaking in special cleaning solutions, but a totally satisfactory method has not been previously demonstrated.

Recently the dentist was offered an aerosol spray material for application to the impression tray before the impression material is placed in the tray. This special spray material acts as a lubricant and release medium to prevent adherence of impression material to the impression tray, thereby facilitating cleaning of trays.

The special spray material is expensive, \$3.85/7 oz. The expense prompted a personal search for a suitable substitute. I have found that a readily available "Pure Vegetable Spray-On Coating for All Cookware" is a satisfactory substitute. The brand name is PAM, produced by Gibraltar Industries, Inc., Chicago, Ill. 60611. I have been able to obtain this product from the local grocery store or the commissary at a price of \$.70/9 oz.

This information may merit the consideration of other Navy dental officers.

CDR F. B. Williams, DC, USN
Dental Department
USS Yosemite (AD-19)
FPO New York 09501

To the Readers: RADM C. L. Waite, MC, USN, a valued U.S. NAVY MEDICINE supporter, recently directed our attention to an editorial which appeared in the March 17, 1971 issue of MEDICAL TRIBUNE, by

W.K.C. Morgan, M.D., Associate Professor of Medicine, West Virginia University School of Medicine, Morgantown, W. Va. We agree that the interesting commentary entitled "The Annual Physical: Factitious Farce or Futile Fetish" should provoke thought and comment. It is hoped that readers will be stimulated to offer their views on this topic in this publication.

Dr. Morgan remarks that a greater sense of perspective is needed in pursuing investigation of hypertension of renal origin, referencing the report of Shapiro et al. in *Amer J Med* 47: 175, 1969. Having detected a slightly elevated blood pressure or serum cholesterol value, or electrocardiogram T-wave changes, Dr. Morgan remarks, what advice and treatment do physicians then offer the asymptomatic patient, and with what results? In asymptomatic subjects, the value of sigmoidoscopy eludes Dr. Morgan. He further questions the merit of cervical cytological screening in asymptomatic women who have had a normal smear reported in the previous two years or more. Dr. Morgan states that the preoccupation with routine physical examinations "has created an anomalous situation whereby most physicians are occupied examining asymptomatic patients who need no treatment; while the patient who is genuinely ill and with severe symptoms can obtain medical help only in a hospital emergency room."

Recognizing that medicine within the military setting is not necessarily analogous to civilian health care, the provocative article does stimulate an evaluation of current screening practices. What do our readers think?

The Editor 🍀

COMMAND AND STAFF SEMINAR

The favorable comments received concerning the Command and Staff Seminar for recently selected Captains of the Navy Medical Corps, held 1-5 March 1971 at the Airlie Conference Center in Warrenton, Va., have prompted additional mention of this worthwhile innovation. (See April issue, page 57.)

Sponsored by BUMED, the seminar was presented jointly by the Naval Medical School and the Naval School of Health Care Administration, NNMC, Bethesda, Md. The endeavor proved highly successful. The purpose of the meeting was to formally introduce newly selected Medical Corps captains to the theory and

practice of management at the transition point in their careers when they can be expected to enter progressively into the direction and control of the Navy's health care delivery system.

Objectives

1. To provide a general framework of current management theory which can be used by each officer as a basis for future study in management.

2. To provide an introduction to the literature in management along with a brief review of the content



Attendees in Session.



Recess during the Seminar.

of the writings of some of the more prominent authors in the field.

3. To provide a perspective on the present overall Navy Health Care Delivery System as a basis for the individual officer's determination of his own future role in this system.

4. To serve as a forum for discussion of present and future management practices, problems and prospects in health care delivery in the Navy.

Procedure

1. Review the structure and organization of the Navy health care system as it presently exists.
2. Discuss current management theory and practices.
3. Discuss communications, and human relations problems common to the system.
4. Provide alternative ways of conceptualizing and analyzing problems.

5. Provide a forum for experimentation with new ideas.

6. Relate the new material to daily problems in the management of health care services in the Navy.

Result

It is expected that participants will be challenged and stimulated to:

1. Develop a continuing interest in improving their own style of management,
2. Prepare themselves for their future role through a program of self development and study in management,
3. Experiment with some of the new ideas presented, and
4. Reassess some of their present practices, altering their behavior where appropriate.—Naval Medical School, NNMC, Bethesda, Md.



CAPT E. J. Rupnik, MC, USN, (center) with attendees.



RADM F. T. Norris, MC, USN (right), Assistant Chief for Personnel and Professional Operations, BUMED (Code 3). CAPT G. E. Kinnear, II, USN, Commanding Officer, USS Spiegel (LSD-32) stands next to RADM Norris.



RADM R. E. Faucett, MC, USN, (left), Assistant Chief for Research and Military Medical Specialties, BUMED (Code 7); RADM D. H. Bagley, USN, (center), Assistant Chief of Naval Personnel for Personal Affairs, BUPERS, and; CAPT (now RADM) C. L. Waite, MC, USN, (right), then CO, Naval Medical School, NNMC, Bethesda, Md.



Returning to Quarters at the end of the day.



Buffet at Airlie Conference Center.



After a full day at the Seminar, attendees round out the program. Careful, doctors! 🩺

HIGHLIGHTS OF THE ACP MEETING

The 52nd Annual Session of the American College of Physicians was held from 29 March — 2 April 1971 in Denver, Colorado. The major emphasis of the meeting was a series of "State of the Art" lectures delivered by well known experts in their respective fields. In addition, the usual collection of interesting and varied clinical presentations and research reports made the meeting both entertaining and informative.

The "Meet the Professor" sessions continued to attract large numbers of interested physicians. This year the total number of such sessions had grown to 96, and again the tickets for each session were "sold out" far in advance.

Of major interest to Navy Medicine was the paper from the Gastroenterology Branch of the Naval Hospital, Philadelphia on "The Inhibitory Effects of Smoking on the Lower Esophageal Sphincter." This paper by LTjg George W. Dennish and CDR Donald O. Castell, MC, USN summarized the results of investigations performed during clerkship training at the Philadelphia Naval Hospital by LT Dennish. The paper was presented by Mr. Dennish, who at that time was a senior medical student at Thomas Jefferson University School of Medicine. The authors commented on the fact that the usual function of the lower esophageal sphincter is to prevent reflux of acid gastric contents into the lower esophagus, and that the usual clinical presentation of reflux, when it does occur, is the symptom of heartburn. It was shown that normal subjects who had no history of heartburn or other evidence of esophageal disease showed dramatic decreases in the lower esophageal sphincter pressure with the onset of cigarette smoking. These decreases in pressure persisted until smoking was terminated. It was concluded that the adverse effects on the lower esophageal sphincter, and the potential for increased acid reflux, should be added to the list of harmful effects of cigarette smoking. It is of interest to note that LT Dennish received word of his selection for Internship at the Naval Hospital, Philadelphia, Pa., on the day prior to his presentation.

Of additional interest to the Navy Medical Corps was the paper on "Clinical and Immunologic Features of Primary EB Virus Infection and Infectious Mononucleosis" presented by Daniel E. Lehane, M.D., Neal R. Newberg, M.D., and CAPT Walter E. Beam, MSC, USN from the Naval Medical Field Research

Laboratory, Camp Lejeune, North Carolina. This very interesting paper presented the results of prospective studies on EB virus antibodies in serum and nasal secretion for a large group of military personnel. In the patients who developed a clinical syndrome resembling infectious mononucleosis, the EB virus infection rate was ten times greater than the incidence noted in the rest of the patient population. In addition, the symptoms of the disease correlated with the peak EB virus antibody titers. The authors concluded that primary EB virus infection is transmitted via the upper respiratory tract, has a six to eight week incubation period, and can be recognized clinically as an illness resembling infectious mononucleosis.

The "State of the Art" lectures were very enthusiastically received, and included the following:

Fritz Bach, M.D., from the Department of Medical Genetics at the University of Wisconsin School of Medicine discussed recent information on "Histo-Compatibility and Transplantation." Dr. Bach's informative talk covered the recent methods of tissue typing of both donor and recipient tissue, and provided some insights into possible advances in these fields in the future.

"Genetic Aspects of Hemoglobins and Red Cell Enzymes" was the subject of the presentation by Arno G. Motulsky, F.A.C.P., Professor of Medicine and Genetics at the University of Washington, Seattle, Wash. There are now known to be more than 100 hemoglobin mutations and over 80 G6PD variants which would appear to result from various genetic mutations. The relative frequencies and possible causes of these variations were discussed.

A delightful talk on "Changing Patterns of Susceptibility of Some Common Bacterial Pathogens to Antimicrobial Agents" was delivered by Maxwell Finland, M.A.C.P., Epidemiologist, Boston City Hospital, and Professor of Medicine Emeritus, Harvard Medical School. Dr. Finland made particular reference to changes in the antibiotic susceptibility of bacteria commonly found in the Boston City Hospital, and made a plea for the rational use of potent antibiotic agents.

Victor A. McKusick, F.A.C.P., Department of Medicine, Johns Hopkins University School of Medicine, Baltimore, Md., was most impressive in his discussion of "Clinical Genetics — An Overview." The emphasis

in this address was on the newer developments in the areas of diagnosis, prognosis, treatment, and prevention in medical genetics.

"Heterogeneity of Peptide Hormones Revealed by Radioimmunoassays" was the title of the address delivered by Solomon A. Berson, M.D. from the Mount Sinai School of Medicine in New York. This discussion covered a field of great interest to current investigators in both endocrinology and gastroenterology, concerning the structure and function of the various peptide hormones which circulate free in the plasma. Dr. Berson revealed some interesting findings involving recent identification of the two forms of gastrin found in the serum, and speculated that similar characteristics may be anticipated in the case of other hormones.

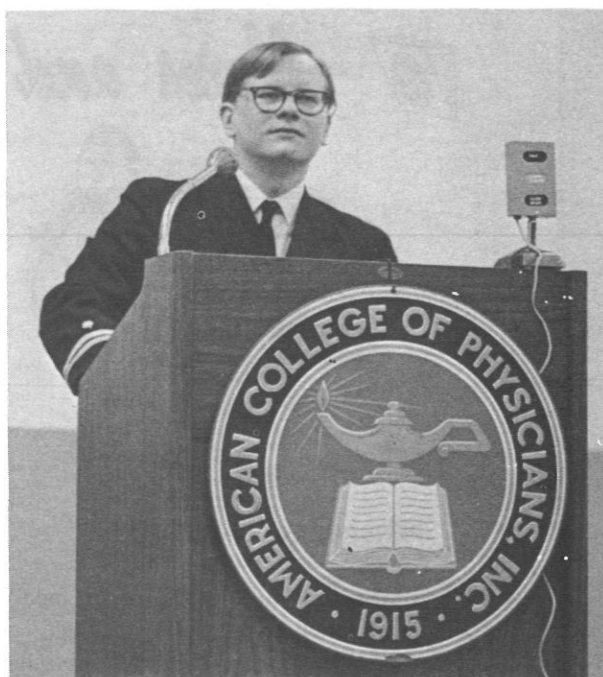
The address by J. Edwin Seegmiller, M.D., Professor of Medicine, University of California San Diego, School of Medicine, La Jolla, Calif., on "Diseases of Uric Acid Metabolism" was also of considerable interest. The many and varied causes of hyperuricemia, as well as the resulting renal problems that these diseases may precipitate, were discussed.

"Plasma Lipoproteins: Disorders in Their Metabolism" was discussed by Donald S. Fredrickson, F.A.C.P., from the National Institute of Health, Bethesda, Md. Dr. Fredrickson, who is world renowned for his work in plasma lipid disorders, discussed the various types of hypolipoproteinemia and their significance as signs of unusual genetic abnormalities, such as abetalipoproteinemia and Tangier disease.

The annual Lilly lecture for this year was delivered by Professor Franz Gross from the Department of Pharmacology at the University of Heidelberg, Germany. Dr. Gross reviewed the important recent developments in the Renin-Angiotensin System and its relation to hypertension.

The current findings on Australia antigen, and its relation to hepatitis and blood bank screening was an area of obvious interest. One highly significant paper in this regard was presented by Dr. Eugene Goesser, et al. from the Philadelphia General Hospital. These authors have demonstrated a significant reduction in the incidence of serum hepatitis following blood transfusion by screening all blood donors for Australia antigen. It would appear that the threat of post transfusion hepatitis can be essentially eliminated by employing this technique. The importance of this particular report and others similar to it in the recent medical literature, seems quite obvious.

Further evidence of the interest in hepatitis and the Australia antigen was reflected in a panel discussion directed by Fred Kern, Jr., F.A.C.P., from the University of Colorado Medical Center School of Medicine in



LT George W. Dennish, MC, USN presents paper entitled "The Inhibitory Effect of Smoking on the Lower Esophageal Sphincter" at the 52nd Annual Session of The American College of Physicians. (Photo by courtesy of CDR Donald O. Castell, MC, USN, F.A.C.P.)

Denver. Among the panelists were such notable physicians as Thomas C. Chalmers, Saul Krugman, and James W. Mosley. The panel dealt with the newer knowledge recently accumulated in the areas of epidemiology, prevention, and management of hepatitis, with particular emphasis on the Australia antigen found in the serum. Of greatest interest was the very exciting data presented by Dr. Krugman, suggesting the likelihood of development of a vaccine to prevent hepatitis in the near future. The importance of these recent developments in Australia antigen detection and their relationships to the possible etiologic agent in hepatitis cannot be overstressed at the present time. It seems evident that much more on this topic will be forthcoming in the near future.

We are indebted to CDR Donald O. Castell, MC, USN, F.A.C.P., our valuable Medical Corps and Gastroenterology Editor, for covering the ACP Meeting at the request of U.S. NAVY MEDICINE. CDR Castell confirms the validity of the adage that when you need a competent man who will deliver, approach the busiest man you know. We regard him as an outstanding member of the staff at Naval Hospital, Philadelphia, Pa.; an accomplished clinical investigator and author; a gifted physician and teacher, and; a warm friend and supporter of U.S. NAVY MEDICINE. 卐



PENSACOLA CARES

A new three point system to improve patient medical care is being established at the Naval Hospital, NAS, Pensacola, Fla. The new system includes establishing contact points within the facility, extending routine sick call hours and initiating a central telephone appointment system.

Contact points will provide a specific place for patients to go for information and guidance concerning each hospital department. The aim is to assist outpatients with their problems. Each ward, clinic and service will have a contact point where patients may discuss complaints related to medical service at the hospital with a MSC officer. Senior Chief Hospital Corpsman Paul D. Tuck described the operation policy as follows: "We have established the contact point system to help the patient get the information he needs. Don't leave the hospital until you are satisfied with the service you receive. We are going to commit ourselves all the way. We want the people to know we care."

Sick call hours have been extended to 2130. (Sick call previously ended at 1600.) This enables working mothers, retired personnel and families with transportation problems to obtain treatment without undue hardship.

A central telephone appointment system will limit waiting time for clinic appointments to ten days or less. The telephone appointment system significantly reduces waiting time and inconvenience to patients.

The three point system was developed to provide better medical care with a minimum of inconvenience to the 76,000 local eligible patients. Each of the changes will be further evaluated and monitored for effectiveness. Future modifications will be made if necessary, according to CDR J.P. Kirsch, MSC, USN,

the hospital Administrative Officer. The Commanding Officer, CAPT R. Lawrence, Jr., MC, USN, pointed out that the Surgeon General, VADM G.M. Davis, MC, USN is establishing new standards of service as objectives for health care facilities throughout the Navy. "Realizing that a lack of resources and manpower is at the root of many problems," CAPT Lawrence explained in a notice to local naval personnel, "we have made our additional needs, medical officers, nurses, corpsmen and space requirements known, in the hope that your hospital may better serve the ever increasing needs of the Pensacola military complex. Until additional resources become available, we are evaluating new management, new philosophies, new approaches, new methods and creative new concepts of health care administration."—Navy News Bureau, Naval Air Basic Training Command, NAS, Pensacola. 🇺🇸

FLUORIDATION — 26TH ANNIVERSARY

Twenty-six years have passed since controlled fluoridation of communal water supplies began in this country. Adjusting the fluoride content in drinking water to an optimal level is considered by responsible authorities as economical, practicable, safe and efficient in reducing the incidence of dental caries.

Twenty-three national and international organizations have endorsed fluoridation. Included among these are: American Academy of Pediatrics; American Association for the Advancement of Science; American Dental Association; American Federation of Labor and Congress of Industrial Organizations; American Heart Association; American Medical Association; American Pharmaceutical Association; American Public Health Association; American Society of Dentistry for Children; Canadian Dental, Medical and Public Health Associations; International Dental Federation; National

Research Council, and; U.S. Public Health Service.

Data acquired from questionnaires and reports of inspections of 196 Navy and Marine Corps dental facilities, worldwide, reveal the following fluoridation status of shore activities/facilities with dental personnel:

Fluoridation by station-installed equipment . . .	60
Fluoridation by municipalities	40
Fluoridation (natural)	18
Fluoridation (natural, excessive)	1

Additionally, nine shore activities without dental personnel have reported fluoridation of their water supplies by station-installed equipment.

Dental officers are encouraged to invite the attention of their commanding officer to the provisions of BUMEDINST 11330.1A concerning the adjustment of fluoride content of communal water supplies at military installations, especially where there is a child population in residence. ☞

INTRAVENOUS FLUID PRECAUTIONS

The American Hospital Association's Committee on Infections Within Hospitals has circulated a special report suggesting certain precautions and guidelines to be followed in the event it becomes necessary to use potentially contaminated intravenous fluids. The report resulted from consideration by the Committee of problems created by the incidence of septicemia associated with the use of Abbott fluids, and the subsequent withdrawal of these products by the U.S. Food and Drug Administration. Because of supply and distribution problems, not all hospitals using Abbott solutions will be able to obtain adequate supplies of intravenous products from other sources.

Minimizing the time interval between opening solution bottles and using them for infusions has been stressed. Until the present problem has been resolved, it is recommended that the use of additives be restricted to drugs requiring dilution before parenteral use. For hospitals in which I.V. solutions are prepared at the nursing stations, the following procedures are recommended:

- (1) Do not strike bottle caps to facilitate removal
- (2) Open the container only at the bedside
- (3) Do not replace caps
- (4) Use solutions immediately upon opening
- (5) Change the I.V. infusion equipment at least every 24 hours, and preferably after each bottle.

For hospitals in which I.V. additive service is provided by the pharmacy, the following modifications were proposed by the American Society of Hospital

Pharmacists and are endorsed by the AHA:

(1) Solutions should be prepared immediately prior to administration.

(2) Since the bottle cap should not be replaced, an administration set should be securely attached immediately after the solution has been prepared.

The infection control committee of each hospital should inform the hospital staff of the problem and develop guidelines to follow in situations where fluids must be administered and Abbott solutions are the only product available.

In order to aid in defining the extent of this problem, hospitals are strongly urged to report promptly all suspected intravenous infusion-associated septicemias, particularly those involving *Enterobacter cloacae* and *Erwinia* species, to their appropriate local and state health jurisdictions. ☞

FROM THE DETAILER'S DESK:

A frequent question asked of the detailer is: "Do you have a list of billets which I can have?" Until 15 March 1971 the answer was "No!"

The Bureau of Naval Personnel has released the Annual Officer Billet Summary, NAVPERS 15993, which is confidential and available to all ships and stations. Its purpose is to help you pick your next assignment.

Please use it.—Code 3172, BUMED. ☞

ACP MEMBERSHIPS

Candidates for Fellowship and for reinstatement to Membership, with immediate advancement to Fellowship, should forward material for review (reprints, five case reports, theses, etc.) to the Governor, along with the proposal. This will enable the Governor to scrutinize the material for review before it is forwarded to College Headquarters to be processed. Candidates for *MEMBERSHIP* should also send in material for review, in the event the Committee on Credentials desires to consider them for immediate election to Fellowship.

Annual Sessions of the American College of Physicians are projected as follows:

April 16-21, 1972, Atlantic City, N.J.

April 8-13, 1973, Chicago, Ill.

March 31 — April 5, 1974, New York, N.Y.

April 6-11, 1975, San Francisco, Calif.

April 4-9, 1976, Philadelphia, Pa.

The Committee on Credentials will meet in Philadelphia 19-21 October, 1971 and 24-25 February, 1972. Proposals for action at these meetings must be received

at least 60 days before the above dates. Governors may require that proposals be received by them at least 90 days prior to the meetings of the Committee on Credentials as noted below.

Meeting Date	Deadline for Receipt of Applications	
	ACP Governor	Executive Office
October 1971	July 19, 1971	August 19, 1971
February 1972	November 24, 1971	December 24, 1971

All medical officers are urged to participate actively in this fine organization. ☸

AMSUS DENTAL AWARDS

Each year, an Awards Committee with membership from the Medical Services of the Federal Government is formed to select those persons to whom awards may be given at the Annual Meeting of the Association of Military Surgeons of the United States. The 78th Annual Meeting will be held 5-8 December 1971, at the Washington Hilton Hotel, Washington, D.C.

This year there will be two dental awards. Nominations for awards should be submitted directly to BUMED, Professional Branch (Code 611), Navy Department, Washington, D.C. 20390, no later than 15 June 1971. Please enclose a curriculum vitae on each nominee and an original and four copies of each nomination.

The criteria established for nominees for each of the dental awards is as follows:

- (1) Nominee for an award cannot be military grade O7 or above or its civilian equivalent (GS-16).
- (2) Nominee need not be a member of AMSUS.
- (3) Nominee must be a dentist associated with the Federal Service in an active full-time status for at least five years.
- (4) Nominee's accomplishment may date back to a period of time not to exceed five years.
- (5) The narrative justification and supportive documentation of the nominee's special achievement is not to exceed 500 words.

You are encouraged to submit nominations for deserving personnel. The two dental awards are further described below.

The Peter M. Margetis Award. This award honors the memory of COL Peter M. Margetis, who was an officer of the Army Dental Corps and widely renowned in the field of dental materials. He was formerly the Director, U.S. Army Dental Biomechanical Research Laboratory, Walter Reed Army Medical Center. He also served as Director, Institute of Dental Research, Walter Reed Army Medical Center from 1968 until his

death on June 17, 1969. Established in 1970, this award is presented annually to a Federal dentist in the Dental Corps of one of the five Federal Medical Services for the most outstanding contribution to the accomplishment of that Service's mission. This award consists of a plaque and an honorarium of \$500.

The Carl A. Schlack Award. This award memorializes CAPT Carl A. Schlack, DC, USN (Retired), whose accomplishments firmly established dental research in the Navy. As an educator and researcher, his contributions significantly enhanced the stature of the dental profession. Newly established in 1971, this award is presented annually to a Federal dentist of one of the five Federal Medical Services for outstanding contributions in dental education or dental research. This award consists of a plaque and an honorarium of \$250.

Nominations for dental awards should be submitted to CAPT A. K. Kaires, DC, USN (Code 611, BUMED), Navy dental representative of the Awards Committee. All awards nominations should be forwarded to the Committee *before 15 June 1971.* ☸

SPRING TRAUMA SYMPOSIUM

The fifth annual Spring Trauma Symposium of the Naval Hospital, Portsmouth, Va., was held on 19 March 1971. The Symposium was sponsored by the Department of Surgery and commemorated the 100th Anniversary of the Navy Medical Corps. CAPT J.T. Mullen, MC, USN, Chief of Surgery, was the Program Chairman and delivered introductory remarks concerning "The Magnitude of Trauma," following a warm welcome to attendees by Commanding Officer RADM J.L. Yon, MC, USN.

The meeting specifically addressed itself to the latent effects of trauma and their management. Among 450 medical and paramedical personnel in attendance were the Surgeon General, VADM G. M. Davis, MC, USN and the former Surgeon General, VADM R.B. Brown, MC, USN (Ret). The interesting program included the following topics and speakers:

Arterial Injury and Repair — RADM Allan D. Callow, MC, USNR, Professor of Surgery and Chief of Vascular Service, Tufts University School of Medicine, Boston, Mass.;

The Management of Burn Wound Complications — Dr. B.W. Haynes, Jr., Professor of Surgery and Surgeon-in-Charge of Burn Service, Medical College of Virginia, Richmond, Va.;

Systemic Response to Gram-Negative Sepsis and Therapeutic Considerations — Dr. Erwin F. Hirsch, Assistant Professor of Surgery, Tufts University School of Medicine, Boston;

Wet Lung, New Thoughts on an Old Disease — CAPT M. Mills, MC, USN, Chief of Thoracic and Cardiovascular Surgery, Naval Hospital, Bethesda, Md.;

Providing Respiratory Care — LCDR L.W. Stringer, MC, USNR, Head, Respiratory Care Branch, Naval Hospital, Portsmouth, and Assistant Professor of Anesthesiology, Medical College of Virginia, Richmond, and;

Tracheal Complications of Respiratory Care — CDR B.L. Aaron, MC, USN, Head, Thoracic and Cardiovascular Surgery, Naval Hospital, Portsmouth, Va.

An evening program was held at the Naval Hospital Officers' Club. ADM Charles K. Duncan, USN, Commander-in-Chief, Atlantic, and Commander-in-Chief, U.S. Atlantic Fleet, was the guest speaker at the banquet which followed a social hour at 1830.

The program was acceptable for five elective hours by the American Academy of General Practice and for retirement point credit granted to eligible Naval Reserve Medical Department officers. ☛

NEW DENTAL CORRESPONDENCE COURSE

The Naval Dental School offers a newly revised correspondence course for dental officers, *Oral Diagnosis*, NavPers 10739-A, which is based on the third edition of *Oral Diagnosis* by D.A. Kerr, M.M. Ash, Jr., and H.D. Millard.

The new course, which has six assignments, incorporates fundamental concepts and procedures in oral diagnosis. The six assignments cover the scope of oral diagnosis; cardinal manifestations of disease; general and oral clinical examinations; radiographic examination; supplementary examination aids; and diagnosis and treatment planning.

Officers who received credit for the previous course, NavPers 10739, may enroll in the new course for additional credit. Ten retirement points will be given for the course, to be credited upon completion of the six assignments.—PAO, Naval Dental School, NNMC, Bethesda, Md. ☛

NEW RESEARCH LAB

RADM Oscar Gray, Jr., MC, USN, has announced that a major new medical research and development facility is being established by the Naval Aerospace Medical Research Laboratory at the National Aeronautics and Space Administration's Michoud Assembly Facility in New Orleans, La. The research and development program which will be performed at the facility is funded at \$7,500,000 over the next five years. It is being manned by a team of civilian and military scientists, headed by CAPT Channing L. Ewing, MC, USN.



CAPT Channing L. Ewing, MC, USN, Officer-in-Charge of new impact acceleration research at Naval Aerospace Medical Research Lab Detachment at Michoud Assembly Facility in New Orleans, La.

The staff includes specialists in mechanical, electrical and instrumentation engineering, computer sciences, aerospace medicine, mathematics, physics, bioengineering and physiology. Several of the staff now residing in Pensacola will move to New Orleans, and Slidell, La., and will be augmented by new employees from that area. A staff of 43 civilian and military personnel is anticipated.

Equipment for the facility includes a large impact accelerator which is being installed in Test Cell 4 at Michoud, with an enclosed track that extends for 750'.

In announcing to his constituents this new use for a portion of the National Aeronautics and Space Administration facility in the New Orleans area, the Honorable F. Edward Hebert, Chairman of the House Armed Services Committee also stated that Tulane University's Delta Regional Primate Research Center at Covington will be used to support the project.

Data collected will be processed and analyzed by the NASA Computer Complex at Slidell. Results will be made available to engineers and scientists in

government and private industry to assist them in designing and testing devices which will protect aviators against high speed crashes in helicopters and other aircraft. These results are valid for all forms of human vehicular transportation, as well.

The program was originated as a joint Army-Navy effort in 1966. The scientific advances upon which the present project is built were originally sponsored by the Army Medical Research and Development Command, and were performed under the direction of CAPT Ewing at Wayne State University in Detroit, Mich. More recently, the Navy's Bureau of Medicine and Surgery and the Office of Naval Research have provided increased funding support.

A native of Jefferson City, Mo., CAPT Ewing is the son of Dr. and Mrs. C.B. Ewing of East Lake Weir, Fla. He received his M.D. in 1952 from the Medical College of Virginia and was designated a Naval Flight Surgeon at Pensacola in 1953. After Fleet assignments with Navy and Marine air activities, CAPT Ewing began his bioengineering research into human head and spine injuries resulting from aircraft accidents, at the Aerospace Crew Equipment Laboratory in Philadelphia.

In 1963 CAPT Ewing received a Master of Public Health degree from Johns Hopkins University. He continued his bioengineering work in Philadelphia while completing his residency training in the specialty of Aerospace Medicine.

Reporting to Pensacola again in 1964, CAPT Ewing served as an Aeromedical Flight Controller for two Gemini spaceflights. In April 1967 he became the first Chief of the Bioengineering Sciences Division of the Naval Aerospace Medical Institute. His tour of duty at Pensacola was interrupted by an assignment as 17th Naval District Medical Officer in Kodiak, Alaska, from Aug. 1969 to March 1970.

The Navy research scientist's list of professional articles is indicative of his strong motivation to contribute to the safety of man in crash and acceleration environments that may cause death or serious injury.

CAPT Ewing was scientific editor of the Navy's standard reference work on Aerospace Medicine, the Flight Surgeon's Manual, in 1968, and wrote several of the chapters and sections. He is a Diplomate of the American Board of Preventive Medicine in Aerospace Medicine; a Fellow of the American College of Preventive Medicine; a member of the American National Standards Institute Z-90 Committee, the American Institute for Aeronautics and Astronautics, the Aerospace Medical Association and other scientific and medical associations.—PAO, Naval Aerospace Medical Center, Pensacola, Fla. ☛

ERRATUM

On page 3 of the April issue of U.S. NAVY MEDICINE a reference to Title 10, United States Code, was incorrectly cited as Section 107(a). The proper reference is Title 10, United States Code, Section 1076(a), which stipulates that: "A dependent of a member of a uniformed service who is on active duty for a period of more than 30 days, or of such a member who died while on that duty, is *entitled*, upon request, to . . . (medical care)." The dependent, therefore, is entitled to whatever resources are contained within a given medical facility. ☛

MEDIHC

Department of Defense officials say that many medically trained servicemen and women are still unaware of a year-old program designed to place them in civilian health jobs or schools when they leave the service.

Of the estimated 3,000 medics—officers and enlisted men alike—who leave the military each month, only about 500 are using the services of Project MEDIHC (Military Experience Directed Into Health Careers), according to LCOL Robert C. Barnum, the Pentagon's MEDIHC coordinator.

"It's a relatively new program," Colonel Barnum reports, "but it's expanding. We started with a pilot plan in Texas and now have representatives in 47 states, as well as the District of Columbia, Puerto Rico and the Virgin Islands. We hope to have people in every state soon."

The program is a combined effort of DoD and the Department of Health, Education and Welfare to help relieve the country's health manpower shortage. MEDIHC was begun when the government realized that many of these medically skilled servicemen—technologists, technicians, hygienists, corpsmen, and hundreds of others—left the military to accept jobs in fields unrelated to health.

"We feel many of these trained people would have liked to remain in health fields, or receive more education in health occupations, but had no idea of how to do it," COL Barnum says. "Now we can help them—if they can't be attracted to remain in the military."

He emphasizes that a member can be referred to training and jobs not only in the field in which he has had some military instruction, but also to other health education and jobs.

The Pentagon colonel provides these capsule facts about the program:

Who's Eligible?

Everyone who has recently left the service, or who is within 90 days of leaving, is eligible regardless of his or her training while in the service. Of course, those with some kind of medical training are particularly encouraged to use MEDIHC. Retirees are just as eligible as those leaving after their first tour.

What must one do?

You will probably be contacted by the local MEDIHC representative on your base or post, but to be safe, get in touch with him yourself. Call the local Transition Office or your personnel officer who should know the whereabouts of the nearest MEDIHC expert.

He'll have you fill in a small card, listing education and training, interests, preferred area of the country, temporary and permanent addresses, etc.

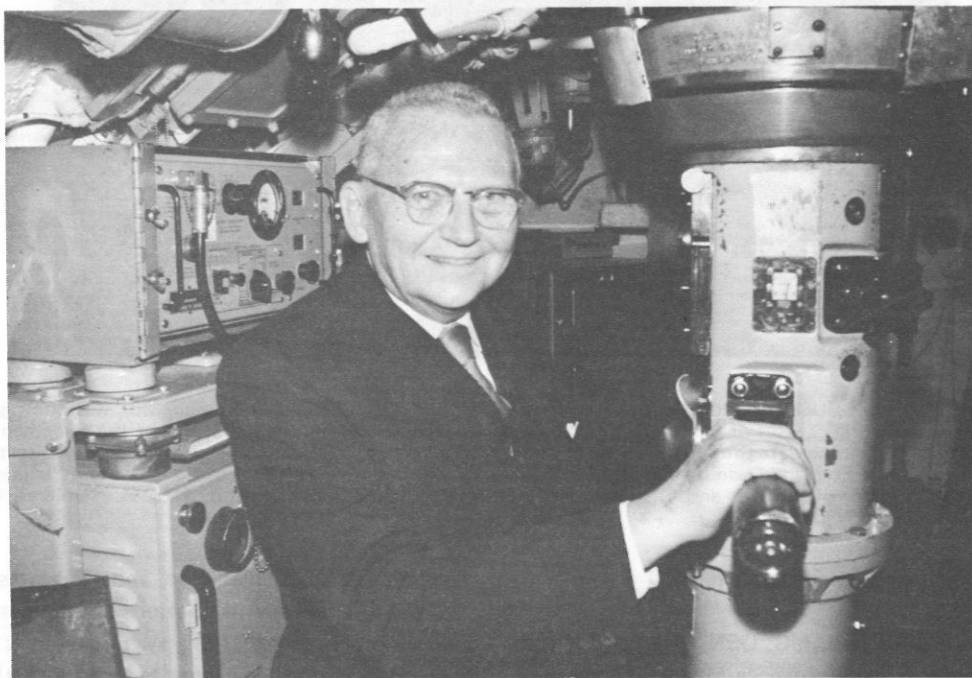
What Happens to the Card?

Your card is sent to the HEW area representative for MEDIHC in the region you stipulated. He mails it to state representatives or directly to potential employers and educators. These MEDIHC agents know the market for your medical talents much better than you could on your own.

What are the Chances of Getting a Job?

Depending on the area and your skills, your chances could be excellent. MEDIHC personnel counselors report that civilian hospital officials are quickly becoming convinced that this government program may solve some of their manpower shortages. If the potential employers or educators are interested, you'll be contacted by them perhaps before you leave the service.—Washington (AFPS). ☙

DR. KEEFER AT THE PERISCOPE



Chester S. Keefer, M.D., former Dean and Wade Professor of Medicine Emeritus at Boston University School of Medicine, Boston, Mass., recently visited Camp Pendleton. World renowned for his pioneer work in the initial evaluation and distribution of penicillin in the early days of World War II, Dr. Keefer is currently Chief of Staff at the Greenbrier Clinic in White Sulphur Springs, W. Va.

Dr. Keefer addressed the staff of the Naval Hospital, Camp Pendleton, Calif., and spoke on "Valvular Heart Disease: Pathogenesis and Therapy." Subsequently he was a guest of the USS Baya at the Submarine Base, San Diego, where he is pictured at the control handles of the submarine's periscope.—CAPT F. E. Jackson, MC, USN; Chief, Dept. of Neurological Surgery, Naval Hospital Camp Pendleton, Calif. ☙

NNMC-MONTGOMERY COLLEGE COMBINE

Beginning in September 1971, area residents will be able to take some Montgomery College courses at the National Naval Medical Center in Bethesda. The Medical Center signed an agreement with the college to hold several courses in classrooms at NNMC.

Tuition for Maryland residents will be \$32 per semester hour (\$15 for Montgomery County residents

and NNMC employees, \$42 for nonresidents of Maryland), plus \$5 registration fee per semester hour and a \$5 registration fee per registrant.

For further information on the new program, write or call Mrs. Paula Matuskey of the Community Services Office at Montgomery College (phone 762-6088, x336).



RADM Felix P. Ballenger, MC, USN (seated), CO of the National Naval Medical Center in Bethesda, Md., was photographed while signing the document initiating courses of Montgomery College at NNMC. Expressing their approval of the agreement are Montgomery College officials (standing, left to right): Thomas Haslip, Acting Dean of Students; Mr. Nathan Shaw, Director of Community Services; Dr. Robert Frieders, Dean of Faculty; Dr. Erick Labovie, Dean of Program Development and Planning; and Dr. Fern Goss, Executive Director of Business and Finance.—PAO, NNMC, Bethesda, Md. Photo by HM2 R. Remieres, USN.

CAPTAIN MITCHELL HONORED

CAPT Robert E. Mitchell, MC, USN, Head of Medical Sciences at the Naval Aerospace Medical Research Laboratory has received notification from Brussels of his election as a member of the International Academy of Aviation and Space Medicine.

The Academy promotes the development of science and fosters research in biology, aviation and space medicine, helping to improve and develop the exchange of information and ideas in these fields. Contributing to the search for new knowledge and its practical scientific application, the Academy improves the teaching of these sciences, fosters the training of experts in

aviation and space medicine, and facilitates international cooperation and relations among persons dedicated to such cooperation. Membership is limited to 200. In addition to a large certificate, CAPT Mitchell also received a bronze Academy medallion engraved with his name.

A veteran of 24 years of naval service, CAPT Mitchell has had medical officer assignments on aircraft carriers and at shore stations both in the U.S. and in foreign countries. He is presently enjoying a third tour of duty at Pensacola where he works in association with Dr. Ashton Graybiel on "The Thousand Aviator Study," which was initiated in Pensacola by Dr. Graybiel in 1940. This research was reported

upon in a paper presented by CAPT Mitchell last year at an international symposium in Garmisch-Partenkirchen, Germany. He earned his A. B. degree at the University of California, and his M. D.

and Master of Surgery degrees at McGill University in Montreal. He is a Fellow of the Aerospace Medical Association.—PAO, Naval Aerospace Medical Center, Pensacola, Fla. 🍀

SENIOR CORPSMAN CELEBRATES 97TH BIRTHDAY



Possibly the oldest living U.S. Navy Hospital Corpsman, Mr. John Patrick Cooney celebrated his 97th birthday recently at the National Naval Medical Center in Bethesda, Md., where he is a patient. LT Minnie Wiggins, NC, USNR, Charge Nurse of Mr. Cooney's ward, was photographed while presenting a birthday present to her unique patient.

John Cooney enlisted in the Navy as a "bayman" in Boston, Mass., on 7 June 1893, when he was 19

years old. Five years later the Navy Hospital Corps was established.

Mr. Cooney has served aboard several ships and during both the Spanish-American War and World War I. Most of his naval medical duties included clerical and pharmaceutical work. After retirement as a Chief Warrant Officer in 1922, he worked as a librarian at the Georgetown University Medical Library in Washington, D.C., from 1930 to the fall of 1937.—PAO, NNMCM, Bethesda, Md. 🍀

VIETNAM VET GOES ACADEMIC

"Pythias," an Indian python, had been the mascot of the Preventive Medicine Section, First Marine Division, DaNang, Republic of Vietnam since April 1968. "Pythias," originally four and one-half feet long, was given to the Section by Mobile Construction Battalion One. Subsisting on a rich diet of rats, she increased her length to well over seven feet by the end of the year. Pythias soon became famous in her own right and it was not uncommon to find an audience of 20 or more intently watching her kill and devour her victims. Many nervously held her for pictures to send home.

Pythias is now eight feet, two inches long and weighs 30 pounds. HMC C. E. Adams, USN, accompanied the python to the U.S. upon completion of

his Vietnam tour of duty. She was presented on 29 March 1971 by: LT T. H. Dickens, MSC, USNR; HMC C.E. Adams, USN; and HMC R.M. Felton, USN. These former members of the First Marine Division Preventive Medicine Section during 1970, delivered Pythias to Earl S. Herald, Ph.D., Associate Director, Steinhart Aquarium, California Academy of Sciences, Golden Gate Park, San Francisco, Calif. LT Dickens and HMC Adams are currently stationed at the Navy Disease Vector Ecology and Control Center, Naval Air Station, Alameda. HMC Felton is now at the Naval Weapons Station, Concord, Calif. When visiting the Steinhart Aquarium, Pythias can be identified by a red dot on her head.



"Pythias," mascot for the Preventive Medicine Section, First Marine Division, DaNang, Vietnam, was presented to the Steinhart Aquarium, Golden Gate Park, San Francisco, Calif. (Left to right) HMC R.M. Felton, USN; HMC C.E. Adams, USN; and LT T.H. Dickens, MSC, USNR presented the python to Dr. E.S. Herald, Associate Director. (Photo by HMCS Frank Sharit, USN.)

DR. SCHAEFER SCORES

Dr. Hermann J. Schaefer, Chief of Biophysics at the Naval Aerospace Medical Research Laboratory in Pensacola, presented an invited paper on "Apollo Mission Experience" at the National Symposium on Natural and Man-Made Radiation in Space, in Las Vegas, Nevada.

The scientist presented micrographs of High ZE-particles recorded in nuclear emulsions which the astronauts carried in small radiation packs in their constant-

wear garments on the lunar missions. These particles are assumed to be the cause of eye flashes experienced by the astronauts in deep space outside the magnetosphere when dark-adapted during rest periods.

In 1966 the Aerospace Medical Association honored Dr. Schaefer for outstanding contribution to space medicine.—PAO, Naval Aerospace Medical Center, Pensacola, Fla.

United States Navy Medicine

CORRESPONDENCE AND CONTRIBUTIONS from the field are welcomed and will be published as space permits, subject to editing and possible abridgment. All material should be submitted to the Editor, U.S. Navy Medicine, Code 18, Bureau of Medicine and Surgery, Washington, D.C. 20390

NOTICES should be received not later than the third day of the month preceding the month of publication.

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SUGGESTIONS are invited concerning U.S. Navy Medicine, its content and form.

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